Better FARMING METHODS

Business Magazine for Leaders Who TRAIN and ADVISE Farmers

JUNE, 1951

20 Cents a Copy

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- Aldrin and Dieldrin are Insect Killers
- FFA and Boy Scouts—Partners
- **SPECIAL IRRIGATION SECTION**

See Page 29

County Agent FRANK WEBSTER
Benton County, Washington
Successful Newspaper Columnist

Windrow Magic

Ford TRACTOR

TO CUT, cure, rake, load and finally feed hay to an animal requires a lot of handling. The more you handle hay the more of it you lose.

The most critical step in the sequence is getting hay into windrows. The very nature of this job requires a considerable amount of handling.

Conventional side delivery rakes travel hay at a 22° angle in relation to the direction of tractor travel. Tests reveal that each wisp of hay in the windrow formed thereby, on the average, moves about 12 feet. Feed-rich leaves take a beating; all too many of them get knocked off.

This Dearborn Rake makes magic windrows, puts more money in the farmer's pocketbook! It travels the hay at a 44° angle in relation to the direction of tractor travel. Hay in these magic windrows has moved only about 7 feet—just a little over half the distance! The reel basket's *rotating-pushing* motion not only puts hay into the windrow faster but also tucks leaves inside, exposes hard-to-dry stems! Ford Tractor Hydraulic Touch Control helps get more of the crop too; it lifts and lowers the reel basket as field and crop conditions warrant.

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To get complete details of the fascinating Ford Farming story, see your nearby Ford Tractor dealer.

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MEANS BETTER WORK
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Dearborn FARM EQUIPMENT

IT WILL PAY YOU to follow this Simple, Economical Mineral Feeding Plan

MINERALS are important to animal nutrition . . . more than most of us realize. They build bone, muscle tissue, blood — you find them in every part of the body. Equally important, they activate the enzyme, vitamin and hormone systems that convert feed into nutrients and in turn build the nutrients into growth, maintenance and reproduction.

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Better FARMING METHODS

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Barnyard manure can be one of the most valuable products on the farm. Yet often we waste half its plant food value before returning it to the soil whence it came. "MORE BENEFITS FROM MANURE" is a new Case 35-mm. educational slide film (not a movie) that illustrates dramatically what manure will do for crops and soils. It tells how to minimize loss of precious plant nutrients, shows how to manage manure for maximum results with minimum labor. Based on solid scientific fact and reliable experiment station data. Narrator's script accompanies film. Read below how to get free use of this new Case Visual Education Aid with accompanying take-home booklet, "HANDLING MANURE FOR EXTRA BENEFITS."

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Address Educational Division, J. I. Case Co., Racine, Wis.

WASHINGTON NEWS

By Fred Bailey

FARM BLOC FIGHTS TO KILL CONTROLS—The farm-led battle to kill food price controls is rushing toward a climatic vote in Congress, due late this month. Farm leaders who never were enthusiastic over DiSalle's successor to the unlamented OPA, have become completely disenchanted with OPS.

Fred Bailey

The chief complaint is what the farm leaders regard as major OPS blunders on cotton and livestock ceilings. But, they are equally aroused by fear of what OPS may do in the future to disrupt normal production and marketing. They fear OPS has inherited many of the sins which made OPA so unpopular with producers.

Observers believe the vote on Sec. 4 of the Defense Production Act, that part which gives authority for both price and wage controls, may be fairly close. But, the majority opinion is that the young giant will survive without a major amputation of its authority.

Chief farm argument against OPS has been on the ground that ceiling controls are at least premature; that the only real answer to prices is abundant production. If adequate labor, machinery, fertilizer, and other supplies are available, farmers, they contend, will supply the production needed to feed the nation well at reasonable prices.

BRANNAN SUPPORTS FARM GROUPS—Secretary Brannan laid his Cabinet job on the line in support of farm groups against important OPS pricing policies and in support of demands for parity as a minimum ceiling price. But he balked at going all out to kill OPS.

The President, in allocating authority under the Defense Production Act. gave Brannan permission to advise OPS on farm matters, but reserved the final decision for DiSalle. And that is the way it has gone: Brannan advised, but DiSalle acted against his advice.

Brannan got in just under the wire, ahead of the President's stabilization message, with perhaps the most telling argument against assertions by labor and consumer groups that farmers are profiteering at their expense. His testimony before the House Agriculture committee is being quoted in argument against the President's request for a year-at-a-time freeze of parity.

Labor groups clamoring for cheaper food prices have been unable to refute Brannan's figures. He showed that farmers last year had an average earning of only 69 cents and a return of 5 percent on investment. This was against average factory earnings of $1.46 and industry profits equal to 15 percent on capital invested. Brannan's testimony could well lead to defeat of the President's parity freeze proposal.

USDA REORGANIZATION NOT NECESSARY—Brannan's answer to demands for a sweeping reorganization of USDA is the realignment of policy authority and a wholesale shakeup of high command in the key Production and Marketing Administration. He is convinced that there is nothing wrong with USDA that better coordination of existing agencies won't remedy.

Some are using the word "purge" in describing the virtually complete turnover of top-level PMA personnel, but the word isn't popular around the department. Result, however, has been that Brannan has surrounded himself with policy and operating officials who are more in sympathy with his objectives.

On Capitol Hill the shakeup is regarded by Administration supporters as the answer to Senate and House bills again calling for adoption of the Hoover reorganization plan. The bills lack farm organization support and are conceded little chance of passage this session.

Major policy level personnel shifts in recent weeks have included:

Gus F. Geissler to succeed Ralph Trigg as PMA director and CCC president.

Harold Hill to succeed Frank Wooley as Deputy PMA director.

Raub Snyder, former FHA deputy administrator succeeds Harold Hill.

Ralph A. Picard moves up a notch in FHA to succeed Snyder.

Roy W. Lennartson replaces John I. Thompson as assistant administrator for PMA Marketing.

Charley Mays, Tennessee PMA director becomes director of the PMA Agricultural Conservation programs branch, and Richard B. Bridgforth, Virginia PMA chairman, appointed assistant to the assistant administrator for Production.

Lyle Webster becomes director of USDA's Office of Information replacing Keith Himebaugh who has taken a post in the Office of Foreign Agricultural Relations. Himebaugh will spend much of his time in South America developing agricultural extension programs. He had been sidelined since the first of the year by ill health.

"This Exterior Plywood Hog House Is Still In Excellent Condition After 16 Years Service"

—Report Scientists at Veterinary Research Institute, Iowa State College, Ames, Ia.

In August 1935, this movable Exterior plywood hog house was built to shelter animals being studied in connection with work on swine diseases by the Veterinary Research Institute, Iowa State College, Ames, Iowa.

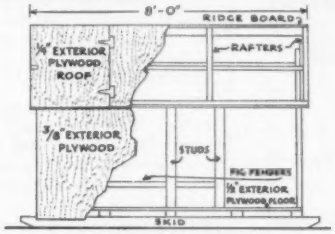
The structure has had continuous hard usage ever since. Because of the nature of the experiments (one of the major projects now being conducted is on swine brucellosis), sanitation is extremely important. In order to insure that no disease germs are carried over from one experiment to the next, the plywood hog house is periodically disinfected with steam and scalding water. Since disease studies require that the house often be moved to clean soil, the house is frequently hauled and jolted over rough terrain to new locations.

"Despite this rough treatment, the plywood hog house is still in excellent condition," report staff members at the animal research center. "The house shows no evidence of racking. The plywood has required absolutely no repairs and has stood the gaff of hard usage for 16 years. Its performance has been entirely satisfactory in every respect."

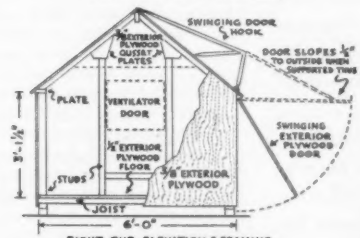
In addition to durability, Exterior plywood offers a number of distinct advantages for the construction of hog houses and other farm structures. Light, strong plywood builds easily-moved portable farm structures. The big, damage-proof panels afford tightness, rigidity and resistance to racking impossible with conventional materials. Large panel size stops drafts and air infiltration, speeds construction. Plywood is split-proof, puncture-proof . . . is easy to work with ordinary tools.

The Exterior plywood hog house which has proven so satisfactory at the Veterinary Research Institute is built according to plans developed by the Midwest Plan Service, a joint activity of the Land Grant Colleges in the North Central States and the U. S. Department of Agriculture.

PLAN AVAILABLE: Below are shown details from Midwest Plan 72631—a modernized version of the hog house described at right. For copy of plan send 45c to Midwest Plan Service, Ames, Ia., or any of the following State Colleges of Agriculture at: Fayetteville, Ark.; Urbana, Ill.; Lafayette, Ind.; Ames, Ia.; Manhattan, Kan.; E. Lansing, Mich.; St. Paul, Minn.; Columbia, Mo.; Lincoln, Nebr.; State College, N. M.; Fargo, N. D.; Columbus, O.; Stillwater, Okla.; Brookings, S. D.; Madison, Wis.



FRONT ELEVATION & FRAMING



RIGHT END ELEVATION & FRAMING

Only Exterior-type Douglas fir plywood with 100% waterproof bond should be used for farm service structures. Positive identification is provided by the edge-branded grade-trademark EXT-DFPA® Douglas Fir Plywood Association (DFPA).

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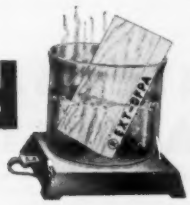
Can Be Boiled In Water—A Test For More Severe Than Years of Weathering!



The 32-page booklet "Better Farm Buildings With Exterior Plywood" contains a section on plywood hog houses, as well as sections on silos, grain bins, dairy barns and other service buildings, on farm home construction and remodeling. For free copy, write (USA only): Douglas Fir Plywood Association, Tacoma 2, Washington. Field Offices: 848 Daily News Bldg., Chicago 6; 1232 Shoreham Bldg., Washington 5, D. C.; 500 Fifth Ave., New York City 18.

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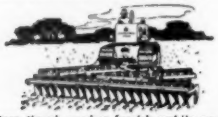

International crawlers furnish mobile power on the farm or highway—and in industry.

That's a lot of power! Where does it come from? How is it used? How is it paid for?

12,428,000 horsepower is the total in all Farmall tractors, International crawler tractors and engines, International trucks, and other power equipment produced by International Harvester in 1950.

Only free men can develop and increase such tremendous power for production, harness it for constructive purposes, make it an instrument for better living.

The best hope for a peaceful world is a strong America. More power and more production make it stronger every day.

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International Harvester builds products that pay for themselves in use—McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Crawler Tractors and Power Units . . . Refrigerators and Freezers. General Office, Chicago 1, Illinois.

EDUCATIONAL CAMPAIGN UNDERWAY—The full extent of USDA plans to deal directly with farmers on matters involving Department programs and policies is due to be revealed in a gigantic "educational" campaign now being prepared by front office and publicity officials.

The plan calls for an organized and centrally directed barrage of information material to be carried to every farmer in the nation through daily and weekly newspapers, farm magazines, radio, and television. This is to be followed up by community meetings to gather farm opinion and start it on the way back to Washington.

Key agencies in the information relay of Washington-to-farmers-to-Washington are the state and county Agricultural Mobilization committees. Cooperation is to be sought from the farm organizations, church and civic groups and such state agencies as Land Grant colleges and extension.

Department officials describe the proposed campaign as a move to "build education programs using the full facilities of the department, and to carry them to the farmers through established channels." Farm organizations are apprehensive, however, that this could develop into a challenge of their claimed authority to speak to the department and Congress for farmers.

Central theme of the department program is the building and strengthening of the family-owned and operated farm. This succeeds the Brannan Plan as a major department objective.

OFFICIALS CONCERNED OVER NEEDED SUPPLIES—USDA officials are worried over National Production Authority reaction to optimistic reports on availability of farm supplies for the current crop year. They fear this optimism may weaken their arguments for a larger share of scarce materials needed to sustain maximum farm production.

Current fertilizer consumption of record proportions, general abundance of pesticides, and reasonably adequate supplies of farm machinery have USDA officials pointing to 1952 as the year of major shortages. Evidence documenting this is being put in front of NPA in an effort to bolster requests for adequate allocations of materials.

How effective USDA's arguments have been will be revealed when NPA announces its Controlled Materials Plan scheduled for this summer.

REA LOSES FIGHT FOR AUTHORITY—REA officials feel that after July 1 they may be operating with only those leftovers of construction materials the Defense Electric Power Administration throws their way. Unless Congress intervenes, REA co-ops must apply directly to DEPA in the Interior Department for

When writing advertisers please mention *Better Farming Methods*

allocation of construction materials.

The administrator of DEPA, Clifford McManus, former president of Georgia Power Company, is known as favoring private power. Secretary of Interior Chapman insisted on the shift which gives DEPA life and death power over every co-op application. Brannan lost his fight to hold Claude Wickard's authority to parcel out scarce supplies allocated to the USDA by DEPA in bulk.

SCRAP DRIVE COMING—Mobilization Director Charles Wilson is readying a scrap metal drive to be handled through NPA with the Agriculture department responsible for picking up farm contributions. Initial plans call for the collection of iron and steel scrap only.

Officials say the need for scrap was aggravated by the railroad strike which delayed shipments. Further reasons for the drive are to build a scrap supply sufficient to keep steel mills running at top capacity to meet both military and civilian needs. Unless Korean war explodes, the drive will make a strong bid for support on the basis of "scrap for civilian goods."

USDA is double checking collection systems, not wanting to again build rusty monuments to government inefficiency.

★

Better Farm Buildings Association Elects W. E. Eakin President

W. Everett Eakin, Toledo, Ohio, Farm Research Director, Libbey-Owens-Ford Glass Co., manufacturers of Thermopane, was elected president of the Better Farm Buildings Association at its annual meeting in New York City.

Eakin succeeds J. F. Schaffhausen, Director of Farm Markets, Johns-Manville Corp., who became Board Chairman of the Association, which has nationwide membership and works to coordinate planning and research of farm buildings.

During the past five years the Association has distributed more than 340,000 farm buildings plans through Agricultural Associates, Ardsley, New York, an affiliated organization.

Members of the Association's Board of Governors, besides Eakin and Schaffhausen, are Miles Engelbach, Field Engineer, Ruberoid Co.; Ralston R. Hannas, editor, American Poultry Journal; O. A. Hanke, Editorial Director, Better Farming Methods; Prof. H. E. Besley, head, Department of Agricultural Engineering, New Jersey College of Agriculture.

Hanke was elected vice president; Engelbach was continued as secretary, and James L. Strahan, Asphalt Industry Bureau, was continued as treasurer.

Better Farming Methods is a member of the Association.

LOST! $657,000 to CORN BORERS

in one state alone during 1950

(This figure is taken from a conservative estimate by official government statisticians, based upon 472,800 bushels lost at $1.39 a bushel, in the state of Kansas. The loss in other states probably is comparable.)

Much of this annual loss can be prevented this year with

SHELL RESITOX D-25

(25% DDT SOLUTION)

Shell Resitox D-25 is DDT in its most effective and economical form. Its success in controlling corn borers as well as a host of other insect pests is a matter of record. Its controlled DDT content, its highly aromatic petroleum base and its readily emulsifiable nature act together to provide a quick-acting, long-lasting, easily-used agent with deadly effect on borers.

VERY ECONOMICAL . . . Shell Resitox D-25 can be applied to corn by aircraft at the rate of one to three quarts per acre, although equally good results are obtained with high-clearance ground equipment. The cost in either case is low.

Be prepared this year to prevent loss from borers. Find out about Shell Resitox D-25 from your Shell Chemical dealer.

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You Too, Can Be a . . .

County Agent Columnist

The radio also offers a means of educating farm people.

By Robert R. Kull
Information Specialist
Washington State College

(The Cover Story)

A typical weekly column.

County Agent's Column

Do you remember last summer the day when your cows, heifers, and calves were on pasture? Suddenly they high-tailed it to the far corner of the pasture as fast as they could go. Do you remember how you complained about the small amount of money you received for that cowhide? Hardly enough to pay for a pair of shoes. Do you remember when those dairy cows came into the barn, gaunt and panting from running and not having a chance to eat and their milk production was down? And you said naughty, unkind words.

Anyone might have complained. But the words you said would be as nothing if those animals had the chance to speak for themselves. And it all happened because you forgot or neglected to treat the stock for heel fly or ox warble.

It must have been very uncomfortable during the fall and winter to have small grubs crawling around inside their bodies because you and your neighbor didn't treat them for ox warble. Can you imagine how they felt? And that's not all. Just about this time of year boils begin to appear on the backs of animals. You know how boils feel. The major portion of this suffering could have been avoided if you and your neighbor had treated the cattle along about this time of year.

No, this treating isn't a big job if you will plan for it. The extension office has complete information and will be glad to be of assistance to you in any way we can to get this fly under control. Won't you contact us this week so that your herd will not suffer each year? And you will produce meat and milk more cheaply.

● A GOOD COLUMN in your county newspapers pays off, says Frank Webster, county agent, Benton county, Washington.

"It's the best way I know of to reach a lot of people in your county, both farm and urban folks."

Frank knows what he's talking about. His column appears regularly in three newspapers in his county—a daily, weekly, and a tri-weekly. So do columns by the three other members of Frank's staff, Virginia Houtchens, J. Morris Bell, and Orland H. Tonnemaker.

Readers like the columns so well that advertisers try their level best to get a spot on the column page. This, of course, makes the editors happy, so happy "they never turn us down," says Webster.

"We write only what is timely and necessary, but whether we send one column from the office, or four—one from each of us—they all go in the paper, together with pictures and bylines."

Preparation Is Necessary

Here's how the four agents handle their columns:

1. *Planning.* Editorial conferences are held in the office as necessary. Ideas are tossed in the hopper for columns that will be timely a month or more ahead. The best ideas are selected and assigned.

2. *Collecting material.* Each agent files relevant material in his own "folder for the month."

3. *Writing.* Webster says the actual writing now takes him from one-half to three-fourths of an hour each week. But he knows the county. When he first started, before he had his column-writing down pat, it took him about three hours to do a column. That included gathering material, sorting and writing it.

4. *Content.* Anything timely and interesting to some part of the farm population is used. Mostly it is "technical stuff—stuff that educates."

"That's our purpose," he says. "To educate. We don't believe in putting out a lot of stuff just to fill space. That would kill off our readership. And, knowing that, it keeps us on our toes trying to be fresh and interesting in writing about things that could be pretty deadly reading."

Fertilizer Makes News

For instance, Webster wrote a series on the functions of the various fertilizers (nitrogen, phosphorous, potash, and the minor elements). He explained which of them county soils need and why, the types of fertilizers you can buy, an explanation of the formula on the sack, the effect on the plant, and a rough indication of the amount to be applied.

Certified seed has gotten a big play from the agents, too. Here they stressed why Rio wheat should be grown in the Horse Heaven area in the county, and the reasons why Ranger and Buffalo alfalfa are particularly adaptable to the county. Also, they wrote about curly top virus on sugar beets, the cattle grub, aphis that plague fruits and vegetables in the county, and the Colorado potato beetle.

Safety Stressed Too

Webster recently included a series of short items on safety in his column—piling stuff in the basement stairway is bad business, pennies don't make good fuses, cigarettes don't mix with dry weeds and leaves. "Just three or four lines for each, but they were read," Webster says.

5. *Source of material.* "Anything we get hold of that we feel is authentic, we keep," Webster says. That includes bulletins and experiment station information of course, and circulars from commercial field men. And, by habit, the columnists collect ideas in the field. While driving along the road, Webster is likely to pull up along the edge of a potato field and say to himself, "Now there's a fellow that has flea beetle damage—I'd better get something out on that."

He includes from one to four topics in each column, depending on the space needed to handle a subject and the time-

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Sound movies are a potent tool for sales, training, and education—a wonderful entertainment medium. The Kodascope Pageant Sound Projector provides the realism in sight and sound that means convincing performances every time with 16mm. movies.

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liness of the ideas.

6. *Style.* "We write as simply as we are able," Webster says. "We like this write-like-you-talk stuff we've been hearing about, and we picked up some tips from Amy Cowing, readability expert for the USDA, when she spoke at our state extension conference last December.

"It just makes sense that the simpler you write the easier it is to get your ideas across."

Besides their columns, the agents also send material from the state extension information office to the papers, put on a radio program twice a week, and write special articles.

MANY county agents are writing successful columns for their county newspapers. However, more can be done by many through this method of education. Not satisfied with college and commercial releases, this county agent has taken this information, and re-written it with the specific needs of his area farmers in mind. He has been so successful with it that the local county newspapers consider his column a "must" in each issue they print.

"Rainmaking" Explained

Benton county is the center of rainmaking activities in Washington, and the agent staff have had their hands full trying to keep peace between the fruit and wheat growers. Webster helped dispel a lot of worries in the county when he wrote a lengthy article explaining the situation as he understood it.

"Another hot one this year was 2,4-D application," he says. "During 1950 the crop off a thousand acres of grapes in the county was lost because of careless handling of 2,4-D in planes.

"There wasn't much I could do, but I did write a column about it, explaining both sides of the problem as I saw it. I reached a lot of people, many more than I could have by personal contact or at meetings," he says.

The staff emphatically agrees that their columns have been a big help to them. They say that columns:

Make them recognized agricultural authorities in their county.

Publicize the extension service and increase its audience.

Make the editors happy and receptive to agricultural news.

Educate the writers.

"When you collect stuff on a subject and have to boil it down and explain it to other people in a few words, it's bound to clarify it in your own mind," Webster says.

"The work I put on my column, one-half to one hour a week, does me more good than any other single day's work."

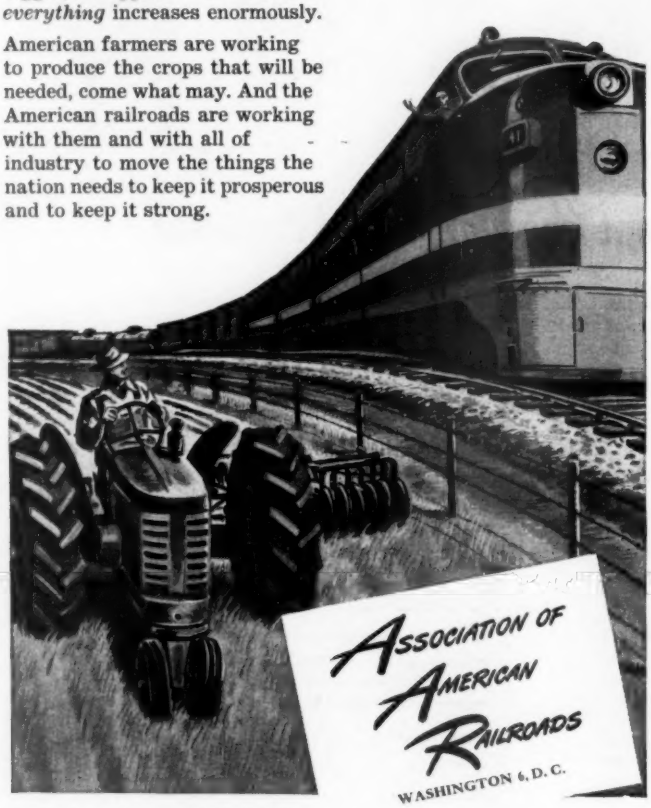
TEAMED-UP for a stronger America!

Farmers and railroads are long-time "partners"—in one of the biggest and most vital jobs in America.

The farmer grows the food, the feed, and the fiber so basic to the strength of the nation. The railroads bring the farmer his supplies and equipment—and carry his products wherever they are needed.

And these days, when national rearmament is everybody's biggest job, this "partnership" takes on even greater importance. For, as America's "muscles" get bigger, its appetite for almost *everything* increases enormously.

American farmers are working to produce the crops that will be needed, come what may. And the American railroads are working with them and with all of industry to move the things the nation needs to keep it prosperous and to keep it strong.



Listen to THE RAILROAD HOUR every Monday evening on NBC.

Conservation Gives Bigger Net Profits

An $11 increase in net profit per acre as a result of conservation farming is shown by several years of tests on 12 experimental watersheds. These experiments were carried on by the U. S. Soil Conservation Service and the Purdue university agricultural experiment station. The watersheds, of about three acres each, are on the Purdue-Throckmorton farm near Lafayete, Ind.

In addition to higher net returns, conservation farming gave higher yields, less water runoff, and less erosion than old fashioned farming, reported R. B. Hickok, research supervisor for the Soil Conservation Service, Lafayette.

The complete system of conservation farming, in this particular case, included: Sufficient fertilization with nitrogen, phosphorus, and potash; use of enough lime to bring the soil to a pH of 6.5; return of most of the crop residues to the soil; and contour tillage and planting. Straight row planting, moderate fertilization and liming, and return of a smaller amount of the crop residues to the soil was the traditional system followed on the other watersheds. Both groups of watersheds were farmed in a 4-year rotation of corn, soybeans, wheat, and mixed grass-legume meadow.

Conservation treatment resulted in 34 bushels more corn per acre, 7 bushels more soybeans, 7 bushels more wheat and an extra ton of hay per acre. The increased crop yields amounted to $90.20 for one 4-year rotation. Decreased plant food losses from erosion added another $8.25 to the benefits. Thus, total benefit of conservation farming per 4-year rotation was $98.45.

Extra costs for fertilizer, lime, and manure during the 4-year rotation totaled a little more than $54, leaving a net benefit for the 4 years of about $44 or $11 per acre per year.

Increased fertilization, more moisture available for the crops because of contour farming, and better condition of the soil were major factors in the higher yields. Hickok pointed out that these factors work together or "interact" to give greater increases from each than would have been obtained from either one used alone.

During the years 1942 to 1947 the watersheds farmed the old fashioned way lost 12.6 percent of the rainfall during the growing season. Runoff from the watersheds under conservation treatment amounted to 5.1 percent. Thus, the modern farming methods saved 7.5 percent more rainfall during the corn growing season which meant that the corn crop had the use of approximately one and one-half inches of water than the others.

The above calculations do not indicate the gradual improvement of the soil. *(L. R. Combs, SCS, Milwaukee, Wis.)*

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Peebles' Experimental Farm, Appleton, Wis.

*Pigs Prove It on Peebles' Whey Products

No test is more effective nor more revealing than the feedlot test; for it measures impartially the effectiveness of a feed product. At Western it is the final guide to the formulation of Peebles' Whey Products.

Western verifies its laboratory findings through practical feeding trials on the 160-acre Peebles' Experimental Farm at Appleton where 20 dry-lot feeding pens make a wide range of studies possible.

This farm is equipped with facilities for feeding trials on poultry and dairy calves, too. Eight separate pens for layers or breeders, and accommodations for 36 dairy calves extend the scope of the farm's experimental work.

On this farm a constant program of feeding trials is in progress as a guide to prove new products and to further improve present products. As a result, superior whey-based products are provided to balance the known nutrient deficiencies in grain and popular farm rations. Thus Peebles' gives the farmer efficient products that promote better feeding results at low cost.

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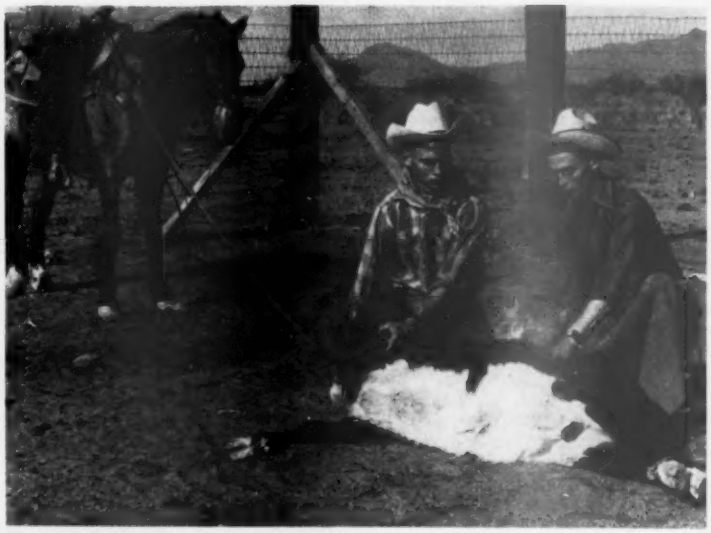
FFA and Boy Scouts—PARTNERS

By Elmaar H. Bakken
National Director
Rural Scouting



These twin brothers, Max and Mark Kartchner, 19-year-old Eagle Scouts and officers of the Arizona FFA, are enthusiastic about both youth organizations.

● FUTURE FARMERS of America have for many years won recognition as outstanding Scouts and Scouters.

This is no accident. FFA members pride themselves on community leadership. Working under a four-fold motto—"Learning to Do, Doing to Learn, Earning to Live, Living to Serve"—these young men gravitate naturally toward leadership and achievement in Scouting, whose similar ideals and activities caught their fancy way back in the grades.

Good examples are the 19-year-old Kartchner twins, St. David, Ariz., both Eagle Scouts and now serving as president and vice-president of the Arizona FFA Association.

Says Max: "The Future Farmers of America and Boy Scouts work together in developing leadership, character, and citizenship in our American farm youth. My interest in farming and community life was greatly stimulated through work on many of my Scout Merit Badges. The experiences and knowledge gathered from the supervised farming program in the FFA aided me immensely in attaining these badges. I am extremely grateful to these two outstanding youth organizations for the many valuable experiences they have afforded me and the important part they have played and will continue to play in my life."

Says Mark: "The technical training I have received in Future Farmer work has aided me greatly in attaining the rank which I hold in the Boy Scouts of America. In turn, the leadership experiences I have gained from Scouting have been invaluable to me in the fulfillment of my duties as an officer in the Future Farmers of America. These two organizations have a great common trust, the development of the rural youth of our great nation."

FFA Officers Visit Headquarters

Each February during the past several years the national FFA officers have visited National Boy Scout headquarters in New York City to press the need of close cooperation between Scouting and the FFA. Two years ago they drafted a statement telling why the two organizations work well together. This was built into a current pamphlet entitled "The Future Farmers and the Boy Scouts." They wrote, in part:

"The Future Farmers of America and the Boy Scouts of America working together help each other serve the rural community.

1. Their programs for the most part deal with different age groups. Boys enter the Cub Scout program at age 8 and advance into Boy Scouting at age 11. Most boys have completed Boy Scouting when they are old enough to be Green Hands in the FFA, though they continue as registered Explorers at age 14. Rural Scouts who enter the FFA, when they begin taking vocational agriculture, have already received training that will help them become better FFA members.

2. Character objectives of the two organizations are similar: Both train in cooperation, leadership, good conduct, and citizenship.

3. Their programs are supplementary: Scouting has many agricultural activities adapted to the age range of Scouts, but it focuses on the great variety of natural boy interests, particularly in the out-of-doors. The FFA builds the vocational and service interests of farm boys, with special emphasis on making better farmers.

4. They mutually need one another; Scouts need the leadership of young

Homemade weed and insect sprayer covers 8 rows of corn at a time

● **Merle Noble (left) and James Howschultz (seated)** explain details of their weed and insect sprayer to Texaco Man Gene Carlson, as Rudolph Howschultz looks on. The 9-h.p. engine gets Havoline Motor Oil, which insures not only the finest lubrication but also protection against rust during the winter when the engine is idle.

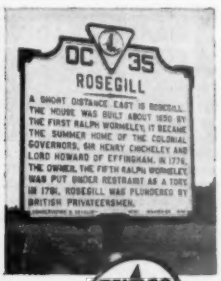
MR. Merle Noble and Mr. James Howschultz, who farm 900 acres near Blencoe, Iowa, built the novel sprayer shown above out of parts of old cars and machinery found around the farm. The steering gear was made out of a Model T rear end. The propelling mechanism works through an old Dodge transmission and another old Model T rear end. Two old oil drums welded together make the 97-gallon tank. The sprayer arms are of ordinary pipe and can be raised or lowered to suit the height of the crop. The motor, which operates both the sprayer pump and provides traction, is a 9-h.p. engine.

Like other farmers, these machinery experts have found that *it always pays to farm with Texaco Products.*

Blows rain off cherry trees to save cherries from splitting. Mr. W. H. Meyer (left), who has 100 acres of cherry trees near The Dalles, Oregon, mounted an airplane motor and propeller on a truck to blow rain off his cherries and save crop. He uses Sky Chief Gasoline and Havoline Motor Oil, and gets timely service from Texaco Man Bob Brown (right).

Joe Acosta a few years ago was farming 30 acres, now farms 1,500. He is shown using his field telephone in one of his trucks. Texaco Man Jackie Field is on hand with Havoline, the motor oil that more than meets standards established for Premium and Heavy Duty motor oils.

Friendly Texaco Service at Rosegill Plantation, near Urbanna, Virginia. Fire-Chief Gasoline, with superior *"Fire-Power"* for low-cost operation, is used in cars and trucks at famous Rosegill Farm. Texaco Man W. J. Revere (left) pays a friendly visit to Manager Sam Bray, who has a fine herd of 170 purebred Guernseys.



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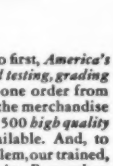

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"I wish Brown's niece would go home. That's the sixth time he's mowed that stretch along the fence."

★

men trained in the FFA; FFA members need Scouting as an avenue for applying leadership training they have received in the FFA. By working together, both groups can do a better job of improving rural leadership."

National Officer Is Life Scout

Don Jorgensen, Lake City, Ia., national vice-president for 1951, typifies the spirit and interest of all the National officers. Says Don: "I feel that the Boy Scouts and the FFA are two organizations that are working with the same goals in mind and that we can continue working in close harmony in the future.

"I am very proud to say that I am and have been a member of the Boy Scouts the last seven years. At the present time I hold the rank of Life Scout."

But not all the national officers of the FFA had a Scouting opportunity. Although over a half million rural boys are active Scouts, nearly two out of three farm neighborhoods have no Scout organization available. National President Walter Cummins, Freedom, Okla., grew up "out of range" of a Scout troop. So did Vice-President Rich Waybright, Gettysburg, Pa.

He writes: "I was never a Boy Scout, but I sure had the desire to be a member as a boy. I have always admired the Scouts and their leaders."

Plan for More Scout Units

These young men in FFA are vocal and active in saying that they want to help. Their pamphlet suggests this orderly plan for establishing more Scout units:

1. Teacher of vocational agriculture and district Scouters make a spot study of residences of FFA members and Scouts in the school district, and locate them on a general highway map.

2. Based on above study, they determine what Scout units can serve the most boys and recommend their findings to community leaders.

3. The school and the FFA chapters vote to sponsor or help organize Scout units for the boys of the school service area who are not within meeting range of present troops and packs.

4. FFA members are selected to organize and help lead dens and patrols in their home neighborhoods. The different community groups making up the school district may register independent Scouting units, or all the boys may register in one Cub Pack and one Scout Troop or one Tribe of Lone Scouts.

5. FFA members serving as leaders register as Boy Scouts, Explorers, or Scouters, depending on age. The teacher of vocational agriculture registers as a Scouter, preferably as Institutional Representative, Commissioner, or member-at-large of district committee.

6. The program of Scouting for farm boys is carried out with FFA leadership assisting. When a farm Scout enters high school and takes vocational agriculture, he can be inducted into the FFA as a "Green Hand."

7. Members of the FFA study vocational agriculture in high school and conduct supervised farming programs on the home farm. Regular chapter meetings are held to plan and conduct a challenging program. The teacher of vocational agriculture serves as chapter adviser. Training in Scouting leadership may be featured in chapter meetings.

The enthusiasm of these young men in agriculture is fortunately supported by vo-ag teachers and state and national FFA advisers. Rural school administrators are also keen for this cooperation between Scouting and the FFA.

Within the past year the National Association of County and District School Superintendents has launched a campaign to extend Scouting rurally. They released a pamphlet recently entitled "Scouting in Rural Schools," which serves as an overall guide.

The Future Farmers of America which, like Scouting, operates under Charter by Congress, takes on a vital role in this campaign. School men, district and community Scout committees are channeling into Scouting this growing FFA enthusiasm for community leadership, and fully supporting this worthy organization of farm boys.

Swift Produces Film

A new film, entitled "Who Buys Your Livestock?" has been produced by Swift and Company.

It is produced in black-and-white, 16 mm. movie which runs nine minutes. Made in Disney style, the film is not only informative but also very interesting.

You will find it listed in the Visual Aids section of BETTER FARMING METHODS.

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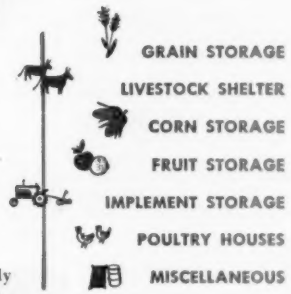

In the last ten years production methods on the farm have been tremendously speeded by the use of modern machinery. Many crops are now harvested in days instead of weeks. This stepped-up productivity has emphasized the need for farm service buildings that are more functional—buildings which are efficient *production tools*—which supplement machinery in increasing the production of both crops and animals.

With a Stran-Steel Quonset, the farmer has the finest non-combustible farm service building obtainable. It provides maximum comfort, convenience, efficiency, durability and adaptability. Its clean functional lines make it a source of pride and satisfaction. Its low maintenance cost and dependability mark it as a sound investment that will keep on producing year after year.

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Six-Year Rotation System

By H. L. Spooner

● E. M. CAVALLO, county soil conservationist, Woodford county, Illinois, and his assistant, Joe Serangeli, devised a six-year crop rotation in the spring of 1949. It promises to have wide acceptance once its merits are shown by actual demonstration.

While the rotation can be used either in combination with strip-cropping or alone, most of the farmers who have so far put it into use have combined it with strip-cropping.

The first year the new rotation was put into practice by 28 Woodford county farmers on 2,000 acres of land. The results that year were so apparent that last year a total of 1118 farmers were under the plan, involving 10,000 acres. Another 10,000 acres under the system will be added this year.

The new rotation is not a general rotation that can be applied to all land nor is it a cure-all for the erosion problem on slopes of more than 7 percent. It is designed for slopes of 2-7 percent. On these slopes, the practice of strip-cropping will conserve soil and needed moisture.

System Stresses Conservation

These two conservationists considered crop rotations from the conservation angle. "Our thinking," says Cavallo, "is that the land must be conserved by a long-range program—not from the angle of immediate cash returns. We have developed the rotation from crop indexes, what each crop takes out of the soil and what it puts back. The ideal soil requires a fertility balance and a soil structure balance, which is just what the six-year rotation achieves. The strip-cropping feature is a conservation practice. In the same way that grass waterways are disposal systems for surplus water, strip cropping is a system designed to save soil and water."

The six-year rotation consists of corn, oats with a catch crop of sweet clover, corn, and oats seeded to alfalfa and brome grass. The latter is allowed to stand two full years. The big feature of the rotation is that one-third of the land each year is in a legume mixture, one-third in oats, and one-third in corn. The big difference between the six-year rotation and other rotations is that most of the others have a larger percentage each year in corn.

Better Than 3-Year Rotation

"The nearest other rotation to our new six-year rotation," says Cavallo, "is the three-year rotation used for years in the Morrow plots at the University of Illinois and once commonly used by many farmers over the country. This rotation also had only one-third of the land in corn, the rotation consisting of corn, oats, and clover. At the University plots, manure, lime, and phosphorus were applied. With this rotation and these applications, the food elements in the soil were just maintained, but there was a constant small yearly loss in the quality of the soil.

"In the other rotations that have been used in the past few years, including the old standard rotation of corn, corn, oats, and clover, the quality of the soil, in spite of the use of much fertilizer, has suffered even more than in the three-year rotation."

The six-year rotation is designed to correct the evils of rotations in which not only the food elements are depleted but also the quality of the soil. The average 70-bushel corn crop takes 90 pounds of nitrogen per acre from the soil, while the average oats crop takes 45 pounds per acre. With the four-year rotation mentioned of corn, corn, oats, and clover, 270

CHART OF WOODFORD COUNTY STRIP CROP PLAN

Fields	1949	1950	1951	1952	1953	1954
1	Corn Oats—SC	Oats—SC Corn	Corn Oats	Oats Alfalfa - 1	Alfalfa - 1 Alfalfa - 2	Alfalfa - 2 Corn
2	Oats—SC Corn	Corn Oats	Oats Alfalfa - 1	Alfalfa - 1 Alfalfa - 2	Alfalfa - 2 Corn	Corn Oats—SC
3	Corn Oats	Oats Alfalfa - 1	Alfalfa - 1 Alfalfa - 2	Alfalfa - 2 Corn	Corn Oats—SC	Oats—SC Corn
4	Oats Alfalfa - 1	Alfalfa - 1 Alfalfa - 2	Alfalfa - 2 Corn	Corn Oats—SC	Oats—SC Corn	Corn Oats
5	Alfalfa - 1 Alfalfa - 2	Alfalfa - 2 Corn	Corn Oats—SC	Oats—SC Corn	Corn Oats	Oats Alfalfa - 1
6	Alfalfa - 2 Corn	Corn Oats—SC	Oats—SC Corn	Corn Oats	Oats Alfalfa - 1	Alfalfa - 1 Alfalfa - 2

Six fields and the crops grown in each field for six years are shown in this rotation chart. The dotted lines show what crops, a cultivated and an uncultivated one, are grown together in alternate strips in each field. The numbers in the alfalfa strips indicate whether it is first or second year alfalfa-brome. Fields enclosed with heavy ink are all in alfalfa as a convenience in pasturing.

This shows strip crop patterns using the six-year rotation.

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H. H. SCHWARDT, *New York State College of Agriculture, Cornell University, Ithaca, New York, January 1950—Chemical Industries.*

"Among the new insecticides, Lindane appears likely to attain the widest usefulness in recommendations for livestock parasite control. It will kill most of the insects that attack livestock or infest animal quarters... In addition, Lindane is one of the few materials that kill DDT-resistant house flies...While house fly control in dairy barns may become its most important outlet, Lindane has many other uses... Lindane, at very small dosage, controls mange for several months."

United States Department of Agriculture. Release #E-800, May 1950.

"Lindane has been found by various investigators to be effective residual insecticide for control of the house fly including strains resistant to DDT..."

Other Uses. ISOTOX insecticides may be used on sheep, beef cattle and horses to control Ticks, Lice, Mange, Flies, Mosquitoes and Fleas. Approved by U.S.D.A. for direct use on dairy cattle for control of Mange (sarcoptic and psoroptic) and Lice. Also effective for surface spraying in calf pens, dog kennels and similar buildings for residual control of Fleas, Flies, Mites, Roaches, Mosquitoes and Ants. (See labels for directions.)

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Lindane approved by U.S.D.A. for dairy barn fly control. Kill flies without spraying cattle!

1. New, proven method of fly control for dairies effectively kills house flies and stable flies. Also many farmers report control of horn flies on cattle in barns sprayed with ISOTOX. ISOTOX Lindane Sprays kill insects both by contact and by fumigant action. By contact the killing power of Lindane is fairly rapid and knock-down can be measured in minutes.

Insects exposed to Lindane tend to reduce their walking and flight activities during the tremor stage, fly out or fall on the floor and there they die. This sequence is important because Lindane-killed insects seldom fall from ceilings into milk cans or other containers.

2. Good residual life. ISOTOX Lindane Spray residues are effective due to the deposit of minute crystals of Lindane. It has been found that by closing windows and doors of barns, whenever possible during the day, the residual period of an ISOTOX Lindane application can be extended considerably.

3. Comparisons prove more real value for your money. ISOTOX Lindane Sprays are concentrated. Don't be confused by apparently cheaper materials which actually are more expensive. You dilute ISOTOX yourself. The average cost at maximum dosage is 45¢ per gallon. The cost of controlling lice in dairy cattle is as low as 6¢ per gallon.

4. Formulations "tailor-made" for your convenience. Choose between these easy-to-use formulations, *concentrated* to save you money:

A. **ISOTOX Lindane Spray,** a wettable powder containing 12.9% Lindane.
B. **ISOTOX Dairy Spray,** a wettable powder containing 25% Lindane.
C. **ISOTOX Lindane Spray Liquid,** an emulsive liquid, containing 12.9% Lindane.
D. **ISOTOX Liquid Dairy Spray,** an emulsive liquid containing 20% Lindane.
E. ***ORTHO* Louse & Tick Powder,** a dry powder containing 1% Lindane.

Both the wettable powder and the emulsive liquids mix readily with water and are simple to use.

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Today, thanks to you—County Agents, Vo-Ag teachers and agriculture leaders—the farmers of America realize that soil fertility is a major factor in determining farm profits. Because of your advice, your soil tests and your demonstration plots, farmers are using more fertilizer, and using it more effectively, than ever before.

Yet, the agronomists of Spencer Chemical Company know that one "fertilizer frontier" has hardly been touched. Out of 623 million acres of pasture in the United States, the U.S.D.A. estimates that barely 30 million acres have been fertilized at all. Moreover, most of these have not been fertilized enough.

This is surprising, since it has been proved that pastures offer exceptional returns on fertilizer investments. Every dollar should bring back, on the average, $8.86 in extra milk or $7.42 in extra beef.

The pastures in your community are your land of opportunity. Talk pasture fertilization. And if you need help or additional information, Spencer Chemical Company will welcome your inquiry.

Finest in SPENCER the Field

SPENCER CHEMICAL COMPANY

606 Dwight Building, Kansas City 6, Missouri

pounds of nitrogen are taken out of the soil while the one year of clover replaces only 90-100 pounds in the soil.

In the six-year rotation, the two corn crops and the two oats crops take 270 pounds of nitrogen, which is replaced with over 300 pounds by the alfalfa-brome and the sweet clover catch crop, more than the crops actually use.

In addition to this more than full replacement of plant food, the six-year rotation is a great help in preventing erosion because of its effect on the structure of the soil. This is something that cannot be bought. Tilth is produced only by growing and plowing under legumes, especially the deep-rooted legumes such as alfalfa and sweet clover. The brome grass roots also supply organic matter, add to the soil tilth, and help resist erosion.

Type of Farming Considered

In starting the rotation, the type of farming must be considered. As has been said, the plan is a long range one and some farmers have been raising cash crops. For these, there is probably too much oats in the rotation. An effort is made to fit a conservation program to the need of each particular farmer and to work out within reason the best paying plan and yet maintain the fertility of the farm. Therefore it is often necessary at the start to use soybeans on some strips although once the rotation is in operation, soybeans will not be represented in it.

In the accompanying chart, the basic rotation is shown by reading the first line across. The cropping system of all six fields is secured by reading from top to bottom. The dotted lines show the two crops that are alternated in strips in each field. All oats not indicated as having a catch crop of sweet clover show they are used as a nurse crop for the alfalfa-brome-timothy mixture.

A prominent feature of the rotation is that each year one field is entirely in the alfalfa mixture for convenience in pasturing, part of it in first year and part in second year alfalfa.

Some year there might be an alfalfa failure. In such a case the conservationists recommend re-seeding with a pasture mixture adapted to the locality.

Advantages of System Outlined

"The big advantage of the six-year rotation and strip-cropping plan," says Cavallo, "is that strip cropping and the predominance of deep-rooted legumes maintain soil quality and prevent erosion. The deep-rooted legumes of alfalfa and the sweet clover catch crop are perfect for improving the tilth and water holding capacity of the soil. The finer roots of brome grass and timothy help control erosion that has in many cases removed all the top soil from sloping fields.

"The farmer who uses the six-year

When writing advertisers please mention *Better Farming Methods*

rotation-strip crop plan on sloping land will be able to improve the quality of the land. Within a few years he will produce more corn on a third of the land than he once produced on half of the total acreage.

"Further, the plan will have considerable favorable effect upon tenancy. Tenants want good farms as well as the owners. Poor land lowers the standard of living. Good land, such as that made possible by the six-year rotation-strip cropping plan, produces a better relationship between owner and tenant and longer tenancy. This means more profit to both tenant and owner."

★

1951 Goal for Overseas Relief Is Announced

A national goal of 1,400 carloads of foodstuff for collection on America's farms in this year's harvest appeal and shipment overseas to feed hungry people in other lands, has been announced by the Christian Rural Overseas Program, better known as CROP.

Plans for the 1951 relief operation were mapped at a four-day state directors' conference in Chicago. It was attended by CROP directors from 16 top agricultural states. They represented two-thirds of the states in which CROP will concentrate this year's appeal.

John D. Metzler, Church World Service member of CROP's National Board, told the gathering that since the organization's inception in August, 1947, $12,300,000 worth of foodstuff was contributed in America for distribution abroad in church-sponsored feeding projects.

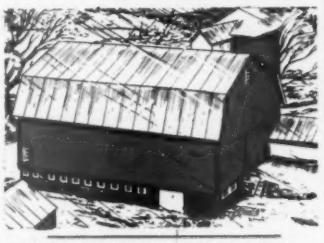
The executive committee of the Department of Church World Service of the National Council of the Churches of Christ in the U. S. A. and the representatives of nine Protestant denominations, earnestly request that in the face of urgent and increasing needs, all church organizations give their continued assistance in order to make the state CROP campaigns even more effective this year.

The denominations represented in Church World Service also expressed their profound gratitude for the past contributions through CROP. They urged a united effort on the community basis that the very substantial aid given through CROP may continue.

CROP collects exportable farm produce during the harvest appeal. During the planting season, CROP operates a Friendship Acres program, patterned similarly to the Lord's Acre movement, in which farm people and their children set aside a farm project for CROP, to contribute it to the appeal at maturity.

SUPER Channeldrain® ROOFING NEWS

NO OVER-HEAD OVER HEAD HERE



WHY WHEELING WARE WEARS LONGER...

ROUND TUB

SQUARE TUB

TWIN-PAIL

Reason one: it's hand-dipped in Dura-Zinc-Alloy *after it's made! Reason two:* hand-dipping *seals* every seam against leaks, rust! *Reason three:* Dura-Zinc-Alloy wears and *wears,* comes to you glowing new—stays that way longer! All three reason enough for you to look *all*-ways for the ware that wears the Wheeling Label!

AMAZING WHEELING DIAMONDRAG MAKES SOFTER BEDS FOR SEEDS TO WAKE UP IN!

Here's an inexpensive harrow that does the best breaking-up job you ever saw! It's the Wheeling Diamondrag—a mesh of cut-steel diamonds that break clods and lumps like tiny plows, leaving a seed bed that's perfect for sowing! And note: Diamondrag is simple to use! See the Diamondrag next time you're at your dealer's—or use the coupon to get information about all Wheeling products for the farm.

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Wheeling Channeldrain Roof Applied in 1928 Still Sound and Tight Without Repairs or Paint!

William M. Matteson, of Springville, N.Y., bought Wheeling Super-Channeldrain Roofing for his warehouse back in 1928—and here's what he says about it today: "This roof has been on 23 years or more and is located within 100 feet of the...railroad track. The smoke and fire ash from the engines pour over this roof several times each day. This roof has not been painted or treated in any way and has stood this severe test these many years, showing no sign of rust or leakage." 'Nough said?

SUPER-CHANNELDRAIN ROOFING BETTER 3 WAYS!

Extra side lap, extra strength, extra rust resistance — make Wheeling Super-Channeldrain superior! Extra side lap gives added protection from leakage! Extra strength of steel gives added stiffness. Extra rust resistance of Cop-R-Loy gives years of life! Super-Channeldrain *wears* — and when it rains *it drains!*

EXTRA LAP

EXTRA STRENGTH

EXTRA RUST RESISTANCE

Wheeling

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Please send information regarding items checked.

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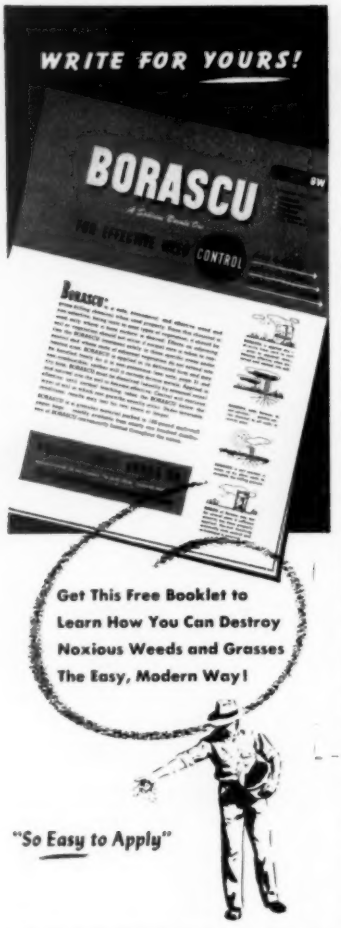

Kill those small patches of noxious weeds now! . . . before they spread through valuable fields. Choose BORASCU* for the certain destruction of weed patches along fence rows, roadsides, ditch-banks, and similar spots . . . it's safe, easy to use, and inexpensive! Don't be satisfied with mere control; *demand destruction!* . . . and then get it with this popular borate herbicide. Use and recommend BORASCU* for destroying and halting the spread of Johnson Grass, Bindweed, Nutgrass, Bermuda Grass, Para Grass, Leafy Spurge, and most other noxious weeds . . . BORASCU* is effective on nearly all vegetation. Complete information, rates of application, etc., is given in our BORASCU* Service Bulletin . . . write for yours!

*Reg. U.S. Pat. Off.

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FUTURE FARMERS OF AMERICA Activities

Nebraska FFA Convention

The 23rd state convention of the Nebraska FFA association was the largest ever held. A total of 92 chapters registered with 180 delegates. The state vo-ag judging contests attracted nearly 100 schools.

In addition to the regularly elected delegates, total attendance at the convention ranged close to 1,000. Parents and FFA members throughout the state were in attendance at every session.

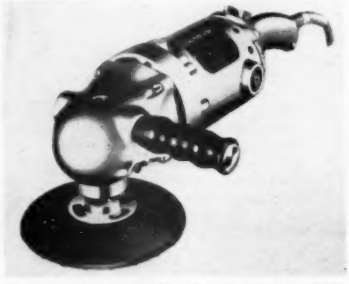
Considerable interest was shown by attendances at the public speaking and parliamentary procedure contests. These were won by Howard Johnson, Fremont, and Waverly, Lincoln Northeast department.

The honor of being the state Star Farmer was awarded to Stanley Schellpeper, Stanton, Neb.

New officers for the coming year include: Gene J. Kerr, Columbus, pres.; Merwyn Davidson, Lincoln Northeast, vice-pres.; Dale Thompson, Franklin, sec.; Calvin Lemmon, Jr., Crawford, treas.; and Allen Schriner, Nebraska City, reporter.

Vo-ag instructors, who in a large measure are responsible for the achievements of these boys are as follows: R. M. Kildee, Fremont; James Wall, Waverly; Lloyd C. Schmadeke, Lincoln Northeast; Robert J. Florell, Stanton; Donald Crosier, Columbus; Merle Ebers, Franklin; Francis A. Switzer, Crawford; and Severin B. Sorensen and Talmadge H. Wimer, Nebraska City.

★



Here is a new portable disc sander available in two models. This sander will be of particular use in home or school farm shops. It has a light, cast aluminum frame, and is powered by a three quarter horse power universal type motor. Manufactured by Cummins Portable Tools, Chicago 40, Ill.

New Safety Bulletin

A new booklet entitled "The Origin and Progress of Farm Safety Education" is available to ag leaders.

Written by T. A. Erickson, a pioneer in farm safety education, it traces the development of farm safety education through youth organizations, colleges, and government.

It will prove a valuable booklet for ag teachers, county agents, and 4-H Club leaders. You will find it listed in the Helpful Booklet section of BETTER FARMING METHODS. It is being distributed by General Mills, Inc.

Chapter Buys Tractor

The FFA Chapter at Snohomish, Wash., has purchased a tractor. The project started about a year ago when a local implement dealer suggested that the Chapter purchase a tractor. This would help them earn money, and at the same time educate the boys in the proper use and maintenance of farm tractors and equipment.

The boys voted in favor of this project and placed the whole matter in the hands of the school board for approval.

The project was okayed, the boys got their tractor, and they are now busy using it in many ways to add to their Chapter income.

Their local J. I. Case dealer was instrumental in helping them begin this project.

★

Montana Honors Johnson

A special mid-century edition of the Montana Future Farmer honors 25 years of FFA work in that state. The first Chapter was formed in 1926.

Special commendation is given to A. W. Johnson, adviser to the first FFA Chapter. He has completed 25 years of service to Montana's FFA organization. He served as local adviser for 11 years and for the past 14 years as state adviser for the Montana Association of FFA.

Through the years Johnson has championed FFA. He has maintained: "without education we are handicapped . . . we are asking that you learn and that you so apply yourself to your studies that your brain . . . will direct your hands to do things that make life more pleasant and profitable on the farm."

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Demonstration displays like this are easy to construct.

Let us help you coach a winning
RODENT CONTROL DEMONSTRATION TEAM

WE'LL BE GLAD TO SEND YOU

- DEMONSTRATION MANUAL — RODENT CONTROL, STEP BY STEP
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- DEMONSTRATION PLACARD IDEAS
- FREE SAMPLE OF WARFARIN

Now you have the opportunity to plan a complete rodent control demonstration project. Without obligation, you may obtain a rodent control demonstration kit containing everything you need — demonstration manual, questions and answers on rodent control, ideas for demonstration placards, and a free bait sample.

warfarin* Assures Plan's Success

Perhaps you are one of the thousands of agricultural leaders reporting amazing results with warfarin rodent killers. Warfarin is surer, safer, and easier to use — an outstanding year-around rodenticide. It places rodent control on a sound, scientific basis.

Help eliminate the costly rat menace in your community by coaching a prize-winning demonstration team. Send for your free kit today.

WISCONSIN ALUMNI RESEARCH FOUNDATION

*Warfarin is a substance discovered in the laboratories of the Biochemistry Dept., University of Wisconsin. It was developed and patented by the Wisconsin Alumni Research Foundation.

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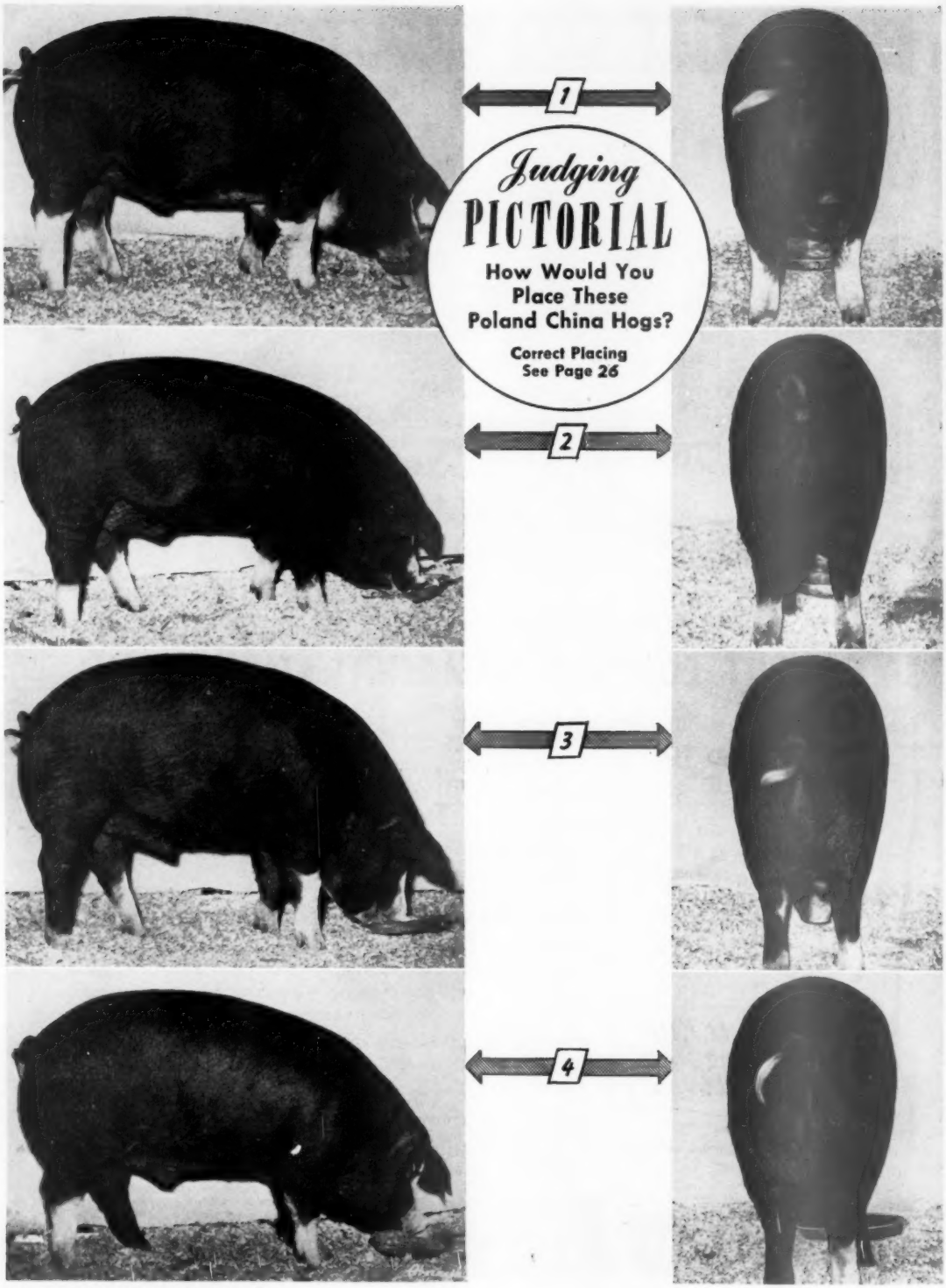


Judging PICTORIAL

How Would You Place These Poland China Hogs?

Correct Placing See Page 26

Better Farming Livestock Guide

Aureomycin Has Limit

Aureomycin added to the diet of pregnant young sows already receiving a good practical ration failed to speed up the baby pigs' growth rate during the suckling stage in trials at the University of California agricultural experiment station.

This is contrary to observations made at several other stations where increased rate of growth resulted from adding aureomycin to the ration. Weaning weights were increased materially, according to some reports, when the antibiotic was fed to young sows during gestation and to pigs in their creeps.

Responses to the antibiotic seem to differ from herd to herd. Adding aureomycin to the ration does not always insure outstanding results.

It is possible that some nutritional or environmental condition may be responsible for the varying results obtained in the growth rate of pigs at the several stations from the supplemental use of antibiotics.

★

Breeding Associations Grow

More than four million dairy cows in nearly half a million herds are now in artificial-breeding associations. This indicates that about one out of every six dairy cows in the United States probably will be bred artificially in 1951, the U. S. Department of Agriculture reports.

On January 1, there were 4,077,706 cows in 467,224 herds in 1,653 associations. This is an all-time high. Compared with the previous year, it is an increase of 44.2 percent in the number of cows and 25.3 percent in the number of herds.

Artificial-breeding associations are now operating in 47 states, Alaska, and Puerto Rico.

★

Colorado Has Corriedale Show

The fifth all American Corriedale show and sale will be held at Greeley, Colo., on July 24, 1951. Stud rams and ewes from the finest flocks in the United States are being consigned to this sale.

Corriedales are becoming increasingly popular in the country. They were first imported to the United States in 1914. In 1950 more than 14,000 were registered, showing a greater increase in registrations over 1949 than did any other breed. They rank third in numbers among purebred sheep in the United States, and on a world wide basis are second in numbers only to the Merino.

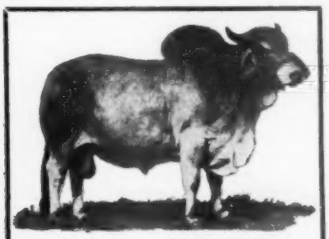
★

Jersey Breeders to Meet

Jersey breeders from all over the nation will assemble in Columbus, O., June 4-6, for the 83rd annual meeting of the American Jersey Cattle Club. Included in the three-day program of activities is an open forum discussion on "Herd Improvement Through Breeding Programs," an open-pit barbecue, and a tour of leading Ohio Jersey herds.

The American Jersey Cattle Club is the oldest dairy breed registry organization in the country. It was organized in 1868 and was chartered in 1880.

During the past year animals from the ranks of the Jersey breed made dairy history. Jerseys now hold six production records over all breeds.



NO MORE WAITING!

SELECT NORRIS BRAHMAN SERVICE AGE BULLS AVAILABLE IMMEDIATELY

Now you can get the bull you need for profit-making crossbreeding for bigger beef from our large selection of service age purebred Brahman bulls. Prices range from Woolworth to Tiffany, but mass production methods make all prices unusually low for the quality offered. Write for full information on how Brahmans in your herd increase dressing percentages, improve health, save feed and bring higher market prices. Ask for Packet "M".

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R. G. "Bob" Herrmann, Gen. Mgr.
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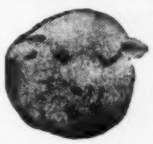
MAKE MORE PROFITS UNDER AVERAGE FARM CONDITIONS
—RAISE MILKING SHORTHORNS

For the average farmer, Milking Shorthorns are unbeatable. Produce 4% milk. Have greater carcass value than other breeds. Second to none in producing milk and meat from home-grown roughage and grain from your farm! Free facts. Or subscribe to Milking Shorthorn Journal. Six months, $1.00; $2.00 per year; 3 years, $5.00.

AMERICAN MILKING SHORTHORN SOCIETY
Dept. BF-5, 313 S. Glenstone Ave., Springfield 4, Mo.

CORRIEDALES ARE DUAL-PURPOSE SHEEP



With Corriedales a sheepman can average 12 to 15 lbs. of top quality wool that brings $1.50 per lb. At the same time he can produce a 125% to 150% lamb crop that is bringing 40c per lb.

Does your flock produce $15.00 per ewe for wool in a year?

Do your lambs top the market? If not, try Corriedales.

Attend the Fifth All-American Corriedale Show and Sale, July 24, 1951, at Greeley, Colorado, to secure top breeding stock.

For information and descriptive literature, write:

AMERICAN CORRIEDALE ASS'N, Inc.
100 North Garth Ave.
Columbia, Missouri
Rollo E. Singleton, Secretary

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Includes Breeders' Directory, Herd Sire Index, special articles on swine feeding, management, showing, etc., written by leading men in the swine field. Write for your free copy today.

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Subscribe to our breed publication SHORTHORN WORLD, $2.50 yearly. Write to

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
Dept. BF Stock Yards, Chicago 9, Ill.

Information About Poland China Hogs

HISTORY—The world's first real "Corn Belt" of commercial importance was in that region of southwestern Ohio known as the Miami Valley. One of the problems presented to the farmers of that region was the production of a hog that would convert the abundant corn crops into "pork" and then carry it to market.

In 1816, the "Shakers," a society owning in common a large tract of land near Union Village, Warren county, Ohio, brought in from Eastern Pennsylvania, one boar and three sows known as Big Chinas. These were very large deep bodied hogs, white in color. These Big China hogs had a marked and beneficial influence on the hogs of that section and their introductions were the first move of importance in molding and developing an entirely new type and breed, which afterwards became known as Poland Chinas.

During the period between 1816 and 1845, several other breeds and kind of hogs were brought into southwestern Ohio and were used in the building of the breed. Among the hogs brought in and used, were the "Irish Grazier," a medium sized white hog, with characteristics of smoothness and early maturity and the "Siamese" a black hog of very early maturity.

About 1839 the Berkshires were used. The hogs were large and red in color, whose ancestors came from England. Other so-called breeds mentioned as having been used to a greater or less extent in the making of the Poland China were Bufords (or Woburns), Byfields, Neopolitans, and Russians.

No one breed or type used in the molding of Poland Chinas exerted a predominating influence.

About 1850 when the process was considered completed, the result was a hog that was the product of the corn belt and of the constructive efforts and commanding genius of the farmers of that section. This is why it is claimed to be the only strictly American breed of hogs.

COLOR MARKINGS—Black, with white feet, nose, and tip of tail.

GENERAL CHARACTERISTICS—Prolific, easy feeding, and early maturing at any market weight.

DISTRIBUTION—The Poland China hog has rather wide distribution. It was developed in America to meet conditions that were peculiarly American. The Poland China has proved its ability to meet every condition that has confronted it in every state in the Union and foreign countries.

BREED ASSOCIATION—The Poland China Record Association, 501 East Losey St., Galesburg, Ill.

BREED MAGAZINE—The Poland China World, 501 East Losey St., Galesburg, Ill., H. M. Meneough, Editor.

★

Poland China Barrow Placing

(Correct Placing—4-3-2-1)

I place number 4 over number 3 because he has smoother sides, deeper and fuller hams, carries more uniformity of width, and has more quality in his hair coat. I grant, however, that number 3 is deeper in the middle and in the heart girth. I fault number 3 because he is light in the ham and doesn't carry the width of number 4.

I placed number 2 over number 1 because he is trimmer in the middle and jowl, shows more balance, and is smoother over the shoulders. While number 1 is deeper in the body and through the heart girth, he is cut-up in the flank, and is wasty in the middle and jowl.—**Milton R. Dunk**

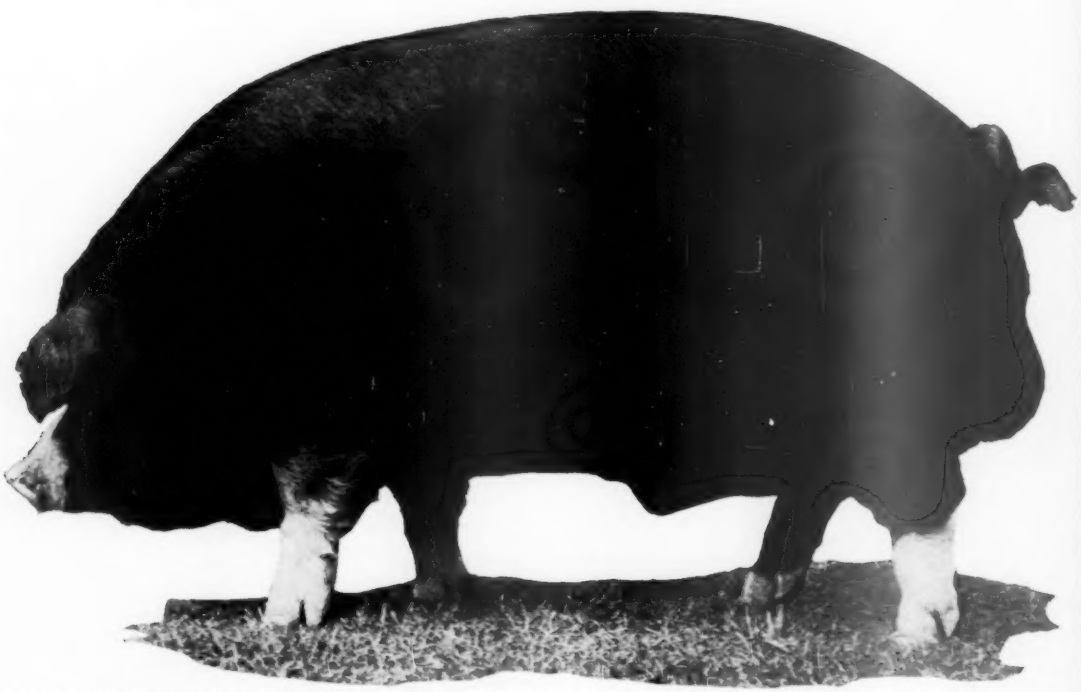
★

Reprints Available

Reprints of the Poland China Barrow judging pictorial will be available to readers of BETTER FARMING METHODS. They can be obtained for five cents each from our Service Department.

Editorial plans call for another pictorial to appear in the September issue of the magazine.

Typical Poland China Boar



Little Squirt Does Big Job at ROUNDUP RANCH

"The Unhung Rustler"

featuring . . .

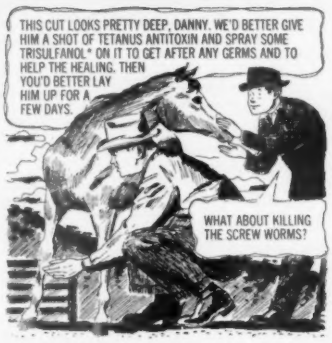
"DOC"— Veterinarian in Hidden Valley

"DAN"— Owner of Roundup Ranch

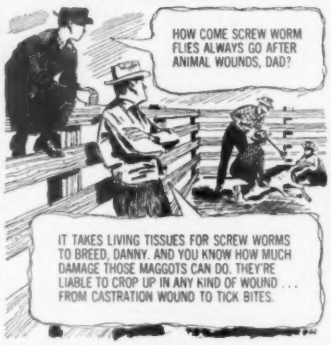
"DANNY, Jr."— A Future Rancher

"LIGHTNING" KICKED AROUND LAST NIGHT AND GOT A CUT ON THE SHANK. COULD I HAVE SOME OF THAT K-R-S FOR SCREW WORMS?
SURE, SON. IT'S RIGHT HERE. I'M CHECKING THE MEDICINE CABINET NOW SO WE'LL BE READY TO TAKE CARE OF THE LATE CALVES NEXT WEEK.

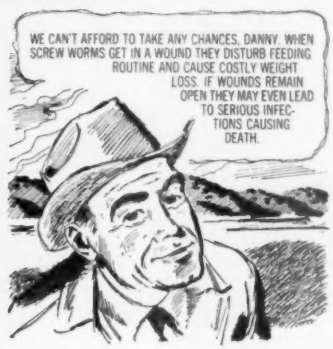
"LIGHTNING'S" CUT LOOKS KINDA BAD. IS THERE ANYTHING ELSE I SHOULD DO?
HE MAY NEED MORE THAN SCREW WORM PROTECTION. LET'S TAKE A LOOK.


THIS CUT LOOKS PRETTY DEEP, DANNY. WE'D BETTER GIVE HIM A SHOT OF TETANUS ANTITOXIN AND SPRAY SOME TRISULFANOL* ON IT TO GET AFTER ANY GERMS AND TO HELP THE HEALING. THEN YOU'D BETTER LAY HIM UP FOR A FEW DAYS.
WHAT ABOUT KILLING THE SCREW WORMS?

A WEEK LATER
"LIGHTNING'S" COMING ALONG FINE, DAD. I'M SURE GLAD WE CAME ACROSS THAT K-R-S STUFF.
YEP. IT SURE COMES IN HANDY, ESPECIALLY THIS TIME OF YEAR WHEN WE'RE WORKIN' OVER THE LATE CALVES.


HOW COME SCREW WORM FLIES ALWAYS GO AFTER ANIMAL WOUNDS, DAD?
IT TAKES LIVING TISSUES FOR SCREW WORMS TO BREED, DANNY. AND YOU KNOW HOW MUCH DAMAGE THOSE MAGGOTS CAN DO. THEY'RE LIABLE TO CROP UP IN ANY KIND OF WOUND . . . FROM CASTRATION WOUND TO TICK BITES.

WHEN SCREW WORM FLIES FIND A WOUND THEY LAY EGGS THAT HATCH AND FORM MAGGOTS. THAT'S WHEN TISSUES ARE DESTROYED. LATER THE MAGGOTS TURN INTO FLIES WHICH AGAIN LAY EGGS. A SQUIRT OF K-R-S KILLS MAGGOTS AND LARVAE LAID BY THE FLY. THAT WAY WE STOP THE LIFE CYCLE.


WE CAN'T AFFORD TO TAKE ANY CHANCES, DANNY. WHEN SCREW WORMS GET IN A WOUND THEY DISTURB FEEDING ROUTINE AND CAUSE COSTLY WEIGHT LOSS. IF WOUNDS REMAIN OPEN THEY MAY EVEN LEAD TO SERIOUS INFECTIONS CAUSING DEATH.

Dan uses new formula **K-R-S**® *with diphenylamine for maggot elimination because:*

1. **K-R-S** kills maggots on contact.
2. **K-R-S** keeps wound toxic or poisonous to newly-hatched screw worm larvae.
3. **K-R-S** is non-irritating to tissues.
4. **K-R-S** offers antiseptic qualities to promote healing.

K-R-S—Improved—available in handy pocket-sized cans ready for immediate use . . . squirts directly into wounds.

One of a series of educational strips prepared by Cutter Laboratories, Berkeley, California, to help stockmen fight DISEASE—the unhung rustler.

Get K-R-S—Improved • CUTTER

Available from your veterinary supplier

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REYNOLDS FARM INSTITUTE

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Louisville 1, Kentucky

Open Letter to Agricultural Leaders on

ALUMINUM FARM BUILDING PRODUCTS

This period of heavy defense demand for aluminum, and of consequently reduced civilian supply, is a good time to take a broad, over-all view of the most recent and rapid development in farm building.

In less than a decade, aluminum roofing and siding on farm buildings has increased from practically nothing to millions of squares annually. Aluminum has rejuvenated old buildings with the "perpetual youth" that comes from imperviousness to rust and resistance to corrosion. Its light weight combined with great strength has stimulated new design trends. It has eliminated the need for painting, reducing maintenance to a minimum. Most important, aluminum's radiant heat reflectivity has raised the productive potential of the farm, particularly for poultry and livestock.

This heat reflectivity - which reduces interior summer temperatures as much as 15°, and also improves winter comfort - has become a new field of agricultural research. Tests prove the prevention of hot-weather poultry losses under aluminum - together with increased egg production in hens and better weight gain in broilers. Other research projects show increased milk production and greater weight gains of hogs and cattle in cooler summer temperatures - which aluminum makes possible.

Aluminum production capacity is now expanding. A major purpose, after military needs, is to increase the farm supply as soon as possible.

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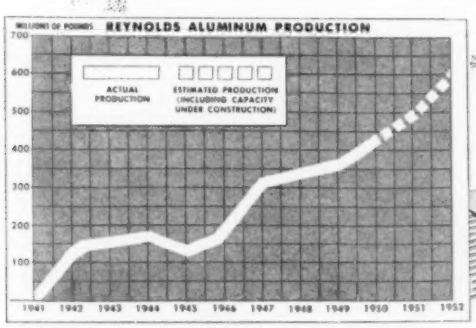

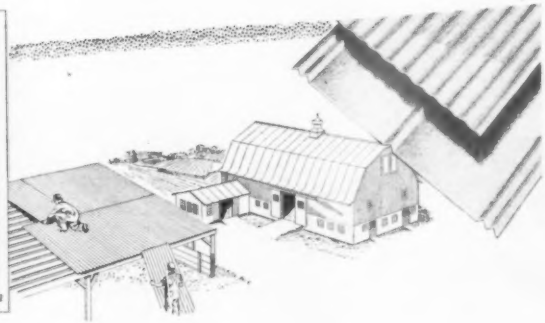

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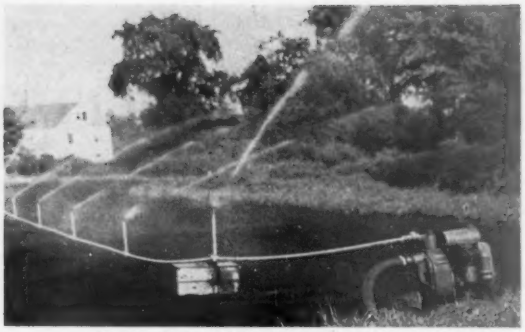
SPECIAL IRRIGATION SECTION



The portable irrigation system used on a New Jersey celery farm. (Photo courtesy Marlow Pumps, New Jersey)

Ditch irrigation using a controlled volume of water. (Photo courtesy W. R. Ames Company, California)

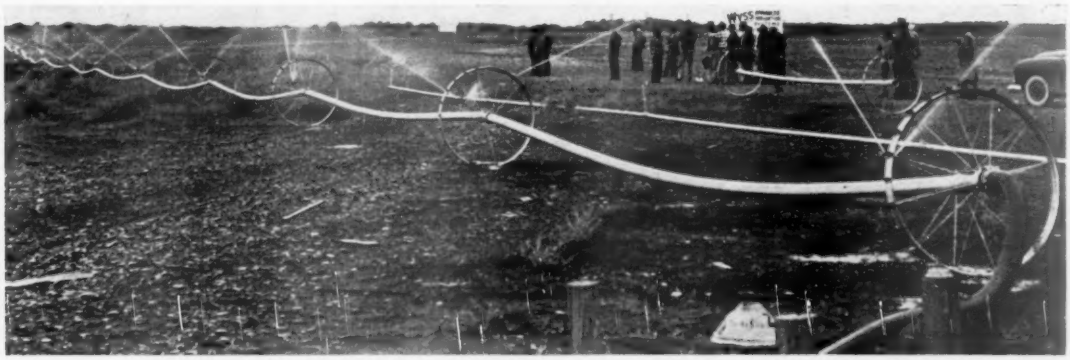
An irrigation pump pumping water from a reservoir. (Photo courtesy Gould Pumps, Inc., New York)

● **THE IRRIGATION SYSTEM of farming is no longer limited to semi-arid regions of the country. It is being used in almost every section of the country.**

Irrigation is used on almost every type of crop, from orchards to pastures to a multitude of truck garden vegetables. The use of irrigation as an aid in crop production is spreading each year. More and more farmers are beginning to see the beneficial results from irrigation. Ag leaders are being called upon more frequently to assist farmers in developing and operating different types of irrigation.

With this in mind, the editorial and advertising departments of BETTER FARMING METHODS decided to place some special emphasis on this phase of farming. We thought that special emphasis on the types of irrigation, how they are used, and pictures illustrating their use would be helpful to ag leaders.

On the following pages, you will find our first attempt to emphasize the use of irrigation and the tremendous possibilities which it has for the advancement of farming in almost every state in the Union.



A portable sprinkler type irrigation system on wheels. (Photo courtesy Stout Irrigation, Inc., Oregon)

Conserve Soil and Water With . . .

Sprinkler Irrigation

By A. S. Gray

● MANY CIVILIZATIONS of the past have vanished because they allowed their topsoil to erode, or because they cropped continuously without returning anything to the land.

We must not let this happen to us.

A soil survey of the United States shows 282,000,000 acres entirely ruined, or to have lost more than three-fourths of the original topsoil. An estimated 775,000,000 acres also have less than from one-fourth to three-fourths of their original topsoil.

These figures should make us pause and reflect. Water, of course, is just as important as the soil. Without water there would be no growth regardless of how much topsoil there was, or how fertile.

Above—In this case, sprinkler irrigation is being used to water a pasture. This is becoming a rather common practice in many sections of the country.

The irrigation of orchards can be successfully accomplished by the use of sprinkler irrigation. This is a fruit orchard in Southern California.

Water In Short Supply

We are experiencing a nation-wide water shortage. In the West we have long been faced with a steadily decreasing water supply. The ground water level has been lowering each year, especially along the coast.

One reason for our water shortage is the lack of rainfall. Also, in semi-arid regions, a great contributing factor is the tremendous waste of water by surface irrigation.

Surface irrigation on lands with slopes of 3 percent and over is in rills and small furrows. As much as 50 percent of the applied water is lost through run-off at the end of the runs on slopes of 5 percent. This method of irrigation wastes water. It causes topsoil erosion.

On lands with slopes of 3 percent and less, irrigation is in furrows or borders, sometimes called flood irrigation. Here the loss is through deep percolation, as well as run-off.

Depth of Penetration Varies

In a light sandy soil the water sometimes penetrates as deep as 10 to 20 feet at the upper end of the field in order to obtain two to three feet of penetration at the lower end. In a heavy clay soil the clay particles, when wet, become slick. By applying water faster than the soil can absorb it, the clay particles tend to puddle, and the weight of the water tends to pack the soil so that it will not admit the water at all. Consequently, the water flows to the lower end of the field, where it ponds, causing deep penetration, or runs off in drain ditches.

In this type of irrigation the deep penetration not only wastes water, but plant nutrients and fertilizers as well. Plants take food only through its solubility in water. It follows, then, that as a soil profile fills with water, this water takes on a portion of the plant foods in the soil. If forced below the plant feeder root area where the feeder roots cannot reach it, both the water and plant foods are wasted.

There is conclusive evidence that water can be saved by the use of sprinklers. The saving depends on the soil type and slope. The average saving would be approximately 50 percent. This would permit twice as much land to be placed under production, or would allow the saving of this water in our storage areas, thus building up our natural supply.

By irrigating with sprinklers, we would not only save water, plant nutrients, and fertilizers, but would increase production and quality of product on any given area. This increase is due to the uniform application of water which provides a uniform penetration to the bottom of the root zone area. Thus, all plant nutrients and fertilizers are kept in the feeding area.

It is imperative that soil moisture be kept above the wilting point at all times. The wilting point of soils varies. It is determined by the amount of water which a plant can draw from a given soil in relation to the total amount of water which it will hold when saturated. For instance, a light sandy soil will retain approximately one and one-quarter inches of water per foot of soil when dry. In this type soil, a plant can extract 80 percent of the total water in the soil. This means that it can extract approximately one inch per foot of soil when the soil has been completely saturated. Therefore, water must be added at each irrigation in that amount to bring the soil up to capacity.

On the other extreme, heavy textured soil will hold about three and two-thirds

inches per foot of dry soil. A plant can only extract about 65 percent of this.

To have uniform plant growth, irrigation must supply water in the soil between the wilting point and field capacity.

The only way to determine whether or not there is proper moisture is to dig down to the bottom of the feeder root zone, after irrigation, to determine if sufficient water has been added.

Repeat this several days before the next scheduled irrigation to determine the amount of water left, and if the wilting point is being approached.

Never wait for wilting to show up in the plants as growth may be stopped before sufficient water can be added.

In a sprinkler irrigation system, the labor required for moving portable pipe is more than offset by the labor saved in the construction and maintenance of ditches and furrows. Labor required to keep down weed growth in ditches does not require extensive land leveling, only sufficient leveling for normal farming operations.

Drainage Problem Eliminated

This system of irrigation gives positive control of the applied water and eliminates drainage problems. It forestalls the accumulation of alkali in the surface soils which is caused by over-irrigation of soils underlain by hardpan or claypan. Over-irrigation tends to hold and built up the surplus water, causing the soil salts to come to the surface and remain as alkali after the water evaporates.

Improved methods of irrigation are not the sole answer to our food production problem. Modern soil saving and soil building practices, as recommended by the United States Department of Agriculture through the Soil Conservation Service, must be practiced in conjunction with all irrigation.

Four Points to Follow

From field observations, to determine important design factors, there was developed four cardinal factors to be used as a basis for all sprinkler irrigation design:

(1) *Knowledge of the Soil.* The soil texture, depth, and slope must be the first consideration in the design of a sprinkler system. Water must never puddle on level land, nor run on the slopes.

(2) *Pressure.* There is a definite relationship between the operating pressure and nozzle size of a given sprinkler. Small nozzles at high pressure increases the stream breakup and will tend to atomize the water. Large nozzles at low pressure decrease the stream breakup and result in large drops which tend to pack the soil.

A poor stream breakup with resultant large drops cannot be used on new seedings because of soil packing and the breaking down of the young plants.

(3) *Spacing.* Through numerous tests of individual sprinklers and the plotting of distribution curves, together with field observations, it has been determined that the maximum distance between sprinklers on installation in normal wind conditions (not to exceed 6 M.P.H.) should be 60 percent of the diameter of coverage of the sprinkler. These established spacings, according to wind, are recommended:

Average Wind Speed	Spacing
No Wind	65% of diameter
Up to 6 m.p.h.	60% of diameter
Up to 8 m.p.h.	50% of diameter
Above 8 m.p.h.	22% to 30% of diameter

All sprinkler laterals must be placed across the wind. In winds above 8 m.p.h., sprinklers are placed 20 feet apart with reduced gallonage to keep within the required precipitation rate.

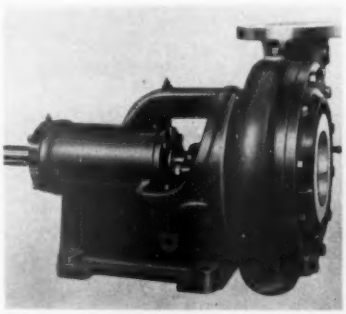
(4) *System Friction Loss.* Main pipeline loss should be held to approximately 10 pounds per square inch. Pipe size should be increased when pumping plant cost, standby charge, and hourly pumping rates, exceed the cost of the next larger pipe.

Friction loss in laterals should be held to 20 percent of the operating pressure. Twenty percent pressure variation results in approximately 10 percent discharge variation from one end of a lateral to the other.

When you buy a sprinkler irrigation system you are paying out considerable money for it. Your purchase should be on the same basis as that which you would use to buy a tractor. You buy a tractor on the basis of your need and of the job that the tractor must do. Therefore, you should buy your sprinkler irrigation system on the same basis. Do your purchasing through some reliable dealer you know you can depend on.

A sprinkler irrigation system is not a package deal, and must be purchased and engineered to fit your individual land.

★



This pump is designed for overhead irrigation and other portable service. It can be mounted on a farm tractor. The capacity goes up to 1200 gallons per minute. Byron Jackson Company, Los Angeles, Cal.

. . . portable one-man ROTO-RAIN cuts labor costs, saves water . . . assures bigger and better crops. Ideal for row crops, pastures, orchards. Aluminum or galvanized. Self-locking "ABC" COUPLERS and VALVES for speedy connections and control. Systems engineered to your needs.

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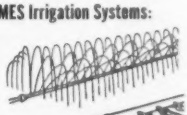

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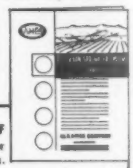

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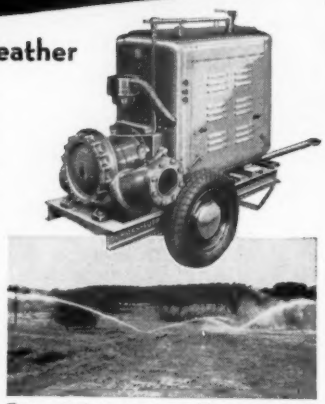

From coast to coast - with crops of all kinds - farmers are depending more and more on Gorman-Rupp Irrigation Pumps.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

Here is a sprinkler system which is mounted on a wheelbarrow. This permits it to be moved rather quickly and easily from one position to another. This is manufactured by the Sunset Engineering Company, Riverdale, N. J.

Irrigation Film

A new 16mm sound and color film entitled "Modern Controlled Irrigation" is available to ag leaders for showings at farm meetings.

The film is educational and entertaining, 35 minutes in length, tells the complete story of the distribution of irrigation water from source to crops. Special cameramen covered agricultural sections throughout the country in order to record every phase of irrigation, including sprinkle, furrow, and flood methods of crop watering.

If you are interested in obtaining this film, write to the W. R. Ames Company, 150 Hooper St., San Francisco 7, Cal. or 3905 East Broadway, Tampa 5, Fla.

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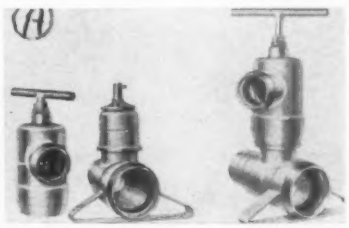

This hydrant valve makes moving of a lateral line very fast and simple. Only one hydrant is required on any single size feeder line, regardless of how many lateral lines are desired. Hydrant works to the right or left and at any angle. Manufactured by the McDowell Mfg. Company, Millvale, Pa.

Special Irrigation Booklets

Here is a special list of irrigation booklets which will be of aid to you.

Tear out this page of the magazine or cut out this list, check those booklets you would like to receive, indicate how many copies of each you want, and attach it to a sheet of plain paper on which are your name and address. Then send your checked list, name, and address to Helpful Booklet Department, Better Farming Methods, Sandstone Building, Mount Morris, Ill.

This list will become a regular part of the Helpful Booklet section.

IRRIGATION SYSTEMS

BUCKNER MFG. COMPANY
—"Buckner Irrigators"*

W. R. AMES COMPANY
—"Efficient Distribution of Water From Source To Soil"*

THE DEMING COMPANY
—"Deming Pumps For Irrigation Service"*

THE GORMAN-RUPP COMPANY
—"Irrigation at Malabar Farm"*
—"Gorman-Rupp Irrigation Pumps"*

GOULDS PUMPS, INC.
—"Goulds Irrigation Pumps"

HALE FIRE PUMP COMPANY
—"Data on Irrigation Pumps"

MARLOW PUMPS
—"Self Priming Pumps for Farm and Irrigation"
—"Marlow Sprinkler Irrigation Pumps"*

McDOWELL MFG. COMPANY
—"McDowell Patented Couplings and Fittings"*
—"Reprint of an article on portable irrigation using McDowell patented couplings and fittings"*

PEERLESS PUMP DIVISION
—"Peerless Sprinkler Irrigation Pumps"*
—"Peerless Fluidyne Pumps"*

REYNOLDS METALS COMPANY
—"More Income Per Acre With Portable Sprinkler Irrigation"*

SKINNER IRRIGATION COMPANY
—"Skinner System Agricultural Sprinklers For Portable Lightweight Pipe"*

STOUT IRRIGATION, INC.
—"Engineering and Designing a Portable Sprinkler Irrigation System"

R. M. WADE & COMPANY
—"The 'Water Way' to Profitable Farming!"*

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"More Income Per Acre"

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Here's a highly informative booklet that tells a brief history of irrigation, shows results with various crops, and advantages of portable sprinkler irrigation over other types. It also lists requirements of a portable system and the labor-saving advantages of using lightweight aluminum pipe. You'll find the material covered in this free, 12 page, illustrated booklet a valuable addition to your reference library. Send today for your copy by mailing coupon.

The dealer in your area who sells Reynolds Aluminum Pipe knows local conditions. Like you, he is interested in promoting better farming methods. Consult him on specific sprinkler irrigation requirements.

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Please send your new illustrated booklet "More Income Per Acre" on the application and advantages of portable sprinkler irrigation.

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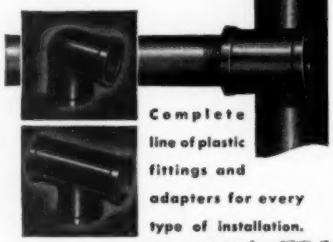

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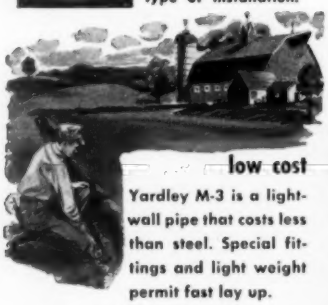

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Ag Leaders and Irrigation Turn . . .

Dust Bowl into Clover Patch

By Lyle M. Nelson

● FIFTEEN YEARS AGO, Jefferson county, Oregon, was known among Oregon county agents as the state's Siberia, a kind of "Lower Slobovia" where no one went if he could help it. Today the same county is one of the choicest plums in the state's agricultural organization.

Why so complete a change in such a short time? The answer is simple. Irrigation and intelligent farming have combined to make Jefferson county Oregon's fastest growing area with a population increase of 170 percent since 1940. Through irrigation and careful long-range planning, the state's dust bowl has blossomed into a lush agricultural center.

In May, 1946, the U. S. Bureau of Reclamation opened the gates of its new Deschutes irrigation project. As the snow-borne waters fingered out over the first of 50,000 acres to be irrigated, farmers and agricultural leaders knew that a new era had dawned.

No wonder so, for in the drought years of the 1930's, some 25 families struggled to eke out a living on what is now the North Unit irrigation project. Abandoned buildings dotted the landscape and farms could be purchased for the taxes. Today in the same area 600 families prosper on land which is yielding as much as $900 an acre in ladino clover seed.

For the most part, clover seed production has accounted for Jefferson county's new wealth. With the coming of irrigation, valley farmers discovered what their agricultural leaders had long maintained: Their lands were one of the world's best places to grow ladino clover seed. In this, as elsewhere in the development of the project, the county agent, state college extension service, department of agriculture, and bureau of reclamation were ready with the answers and with expert advice.

Ironically enough, it is the very lack of fertility in the land along with inadequate rainfall—reasons why many a farmer gave up his land in the 1930's—which are today the chief factors in the record clover seed production. Agricultural leadership has turned this handicap into a distinct advantage for Jefferson county farmers.

By carefully controlled applications of fertilizer, chiefly sulphur, and by strategic irrigation at just the right time, plants are kept alive and healthy, but are allowed to wilt down two or three times in each growing season. Finally, because the moisture content is almost completely under control, farmers are able to cause the plants to dry up and turn brown just in time to be harvested and threshed for seed.

The record has been good. In 1950,

Irrigation and intelligent farming have transformed Jefferson county. In the background, man has carefully protected this field from erosion and put it to productive use. In the foreground, nature still drifts the sand and raises tumbleweed.

Jefferson county farmers produced approximately 3,000,000 pounds of ladino clover seed, an average of around 200 pounds to the acre for the 16,477 acres under irrigation.

But agricultural leaders aren't satisfied. They maintain that the yield can be materially increased by a program of importing more bees to handle pollination. At the present time, there is approximately one hive to an acre. The county agent's office has recommended a ratio of at least two to one.

Foresighted planning is also evident in another activity gaining momentum this

Ladino clover seed is the income for Jefferson county farmers. Almost completely weed free, it commands a premium price.

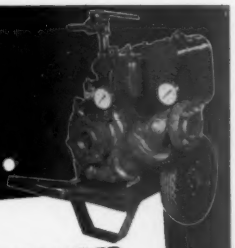
spring. One of the major reasons why clover seed grown in Jefferson county commands such a high price on the market is that it is almost completely weed free. This is due to the almost desert-like character of the land before the coming of irrigation. To keep it that way, Jefferson county farm leaders have set up a really effective weed control district and are going about the task of spraying and burning all noxious weeds with real enthusiasm.

County 4-H work ranks high in this area and other farm activities are going well. Businessmen in the towns on the project also are cooperating. Joint committees are studying recreational needs, market conditions and outlets.

Focal point for most of this activity is the county agent's office in Madras. Now directed by Paul Barnes, it has the full support and confidence of project farmers. And if Barnes needs assistance he has only to walk a short distance and call on Alan Hunt, manager of the Pacific Supply Cooperative and county agent during the early development of the project. A third ex-county agent, W. Dean Boyle, Bureau of Reclamation, also has had much to do with development of the area. From Idaho where irrigation farming has been underway for years, Boyle has contributed many important ideas on layout and design.

While these men have been among the leaders, there have been many others who have contributed materially to the success of Oregon's fabulous farm center.

WHY BUY MARLOW?..



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2. **Marlows are the only irrigation pumps delivered completely equipped.** No extras to buy . . . no other costs. Just add fuel and oil and they're ready to go.

3. **Marlow makes the world's most complete line of sprinkler irrigation pumps.** Available in 14 centrifugal models — a size, capacity, mounting and power type for every sprinkler irrigation need.

4. **Marlows are sold and serviced from coast to coast by leading irrigation equipment distributors.** You are never far from complete, prompt Marlow attention.

5. **Marlow sprinkler irrigation pumps are backed by the excellent Marlow reputation for quality** — a reputation earned by a quarter century of manufacturing pumps that can't be beat. Ask any Marlow pump user.

No other pump offers ALL THESE ADVANTAGES.

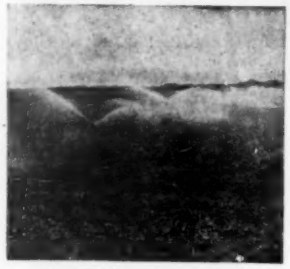
That's why, if the question is sprinkler irrigation, Marlow is the answer.

Send for complete details.

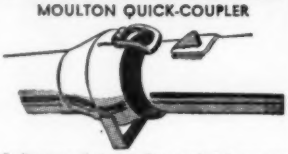
MARLOW PUMPS 250 GREENWOOD AVE. RIDGEWOOD, N. J.

Also manufacturers of the World's Most Complete Line of Self-Priming Centrifugal Pumps

For Bigger and Better Crops
IRRIGATE WITH . . .
THE MOULTON
Portable Irrigation System



MOULTON QUICK-COUPLER



Easily connected and disconnected from center of pipe. 25° angle at every joint. Hinged handles on all pipe.

- COMPLETE SYSTEMS
- ENGINEERED FOR ANY FIELD
- SIZED TO FIT ALL NEEDS
- LIGHTWEIGHT ALUMINUM AND STEEL PIPE

Coupler and pipe a welded one-piece unit. No bolts, clamps or rivets. Completely welded for trouble-free service.

ALSO PUMPING UNITS & SPRINKLERS
Send for FREE Information

Moulton IRRIGATION CO.
Mfrs. of Portable Irrigation Systems
WITHROW, MINN., DEPT. BF-6

MORE COVERAGE PER DOLLAR *with*

No. 80 Special

RAIN BIRD Sprinklers

There's a Rain Bird Sprinkler for every agricultural requirement, with 19 different models, ranging in size from 1½ G.P.M. at 3 pounds pressure, to 610 G.P.M. at 120 pounds pressure.

As in years past, Rain Bird continues with research and testing to hold the lead with improved sprinklers that give more coverage per dollar of cost.

Our research department is at your service. Handbook and bulletins on request to county agents, teachers, and agricultural leaders.

RAINBIRD Sprinkler Mfg Corp.
GLENDORA, CALIFORNIA
L. R. NELSON Mfg. Co., Inc.
PEORIA, ILLINOIS

An Eastern farmer uses sprinkler irrigation to water his celery bed

Ag Leaders Will Find . . . .

Irrigation Is Widespread

By Paul Work
Cornell University

● EVERYBODY KNOWS that most of our far Western vegetables are grown under irrigation. But, every year an increasing amount of artificial rain falls on hundreds of vegetable acres in the south and east.

Last summer, looking from a single spot on Long Island, I was able to see the steady sweep of sunlighted sprinkler heads on nine different farms. Water increases yields, improves quality, and often, but not always, shortens the time that land is occupied.

Irrigation frequently insures early maturity and accompanying favorable prices. It is great to hit that early market when competing growers are held up by drouth.

Results of Irrigation

Many bulletins and books report the gains by irrigation under field experimental conditions—often with crops that people assume could get along very well without extra water. Experiments in Alabama (Ala. Expt. Sta. Bul. 276, 1950 Ware and Johnson) showed gains from irrigating sweet corn, four year average, of 217 to 256 dozen ears per acre varying with the accompanying fertility treatment. The total range was from less than 400 dozen to nearly 1,800 dozen. Growers are generally pleased with yields of 1,000 dozen.

Watering was accompanied also by a marked increase in percentage of No. 1 ears. Responses differed considerably in the various years. In the Alabama experiments potatoes, lettuce, cabbage, turnips, and mustard showed substantial gains from watering. Celery is notorious for its thirst and most of the small intensive market garden crops as well as cauliflower and broccoli profit well.

Irrigate Potatoes

Time was when irrigation was not seriously considered for Irish potatoes in the East. The recent Cornell Experiment Station bulletin 862 (Hampton, Murphy, and Hoff) shows an 8-year average increase in yield of 57 bushels per acre or 22 percent. In only 3 of the 8 years did the gain fall below the 15 bushels per acre which the late Henry Talmage figured he would require to justify the installation. In one year the gain was 155 bushels, another 211 bushels.

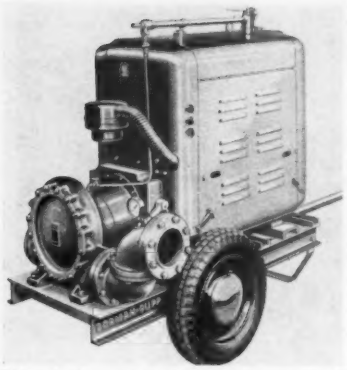
This bulletin indicates costs ranging from below $5 to $7.65 per acre inch, the number of applications being an important factor. The Alabama figure was $5.56 per acre inch.

Most of the recent eastern irrigation installations have made use of light weight portable pipe with slip joints. Rotary sprinkler heads are most commonly used but there has been recent development in the use of perforated pipes of the same type.

Soak Ground Thoroughly

The older oscillating nozzle lines or Skinner type require eight hours to apply an inch of water. Newer installations put on an inch in an hour or two, according to the soil. One to two inches is a common application. It is better to soak the ground thoroughly, say once a week, than to make light waterings more frequently. Watering in full sunshine seems to do no harm. Distribution of rainfall is more useful as a guide than total per month or per season.

The first requisite for successful irri-



This single stage centrifugal pump is designed for use with portable pipe irrigation systems. It has a 6-inch suction and 6-inch discharge. The pump primes in approximately 30 seconds and the exhaust primer will operate on suction lifts up to 20 feet. Made by the Gorman Rupp Company, Mansfield, O.

★

gation is to be sure of adequate water supply, especially in dry weather, and your water rights. Streams, wells, and farm ponds are common sources of water. Soil Conservation Service is helping make water available on many farms. A good many market gardeners have drawn upon municipal supplies, though these sources are sometimes cut off in drouth.

Both the Alabama and New York bulletins cited above point out that there is on the average three weeks to a month of dry weather every year. Many figure that they should water crops whenever the previous week has failed to see an inch or more of rainfall. But most growers wisely supplement this by watching the soil and the plants.

In determining the type of irrigation system to use, it is well to call in an agricultural engineering specialist. He can help design the installation, relating area and crops to be watered to available supply, and helping to decide on size and number of mains. Many irrigation companies have good engineers who are responsible and who feel it is poor business to give anything but sound advice.

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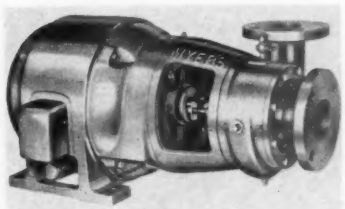
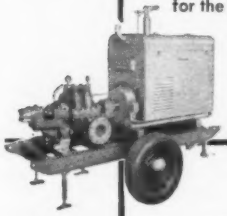


The F. E. Myers and Bros. Company, Ashland, O., manufactures pumps with various capacities. They are designed to operate under pressures of 125 pounds per square inch and to have capacities up to 700 gallons per minute. They will handle small sprinkler and ditch irrigation systems.

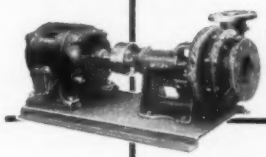
NOW irrigation pumps by GOULDS

Goulds—long a great name in domestic water systems and all farm pumps—now presents the industry's outstanding line of irrigation pumps.

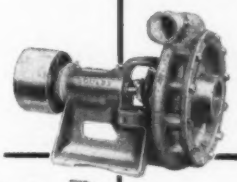
With the Goulds line, a portion of which is shown here, you'll fill every need *exactly*. Gasoline engine-driven, motor-driven, belt-driven or self-priming centrifugal irrigation pumps, capacities to 1800 gallons per minute, pressures to 140 pounds—you'll find the *best* pump for the job bears the Goulds name.



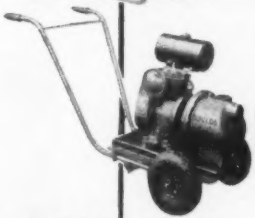
Chrysler engine-powered . . . capacity 1200 G.P.M. at 125 lbs. pressure.



Top-grade 3-phase or single-phase electric motor. Capacities to 1600 G.P.M. at 45 lbs.



Belt-driven unit, capacities from 50 G.P.M. at 60 lbs. to 1500 G.P.M. at 35 lbs.



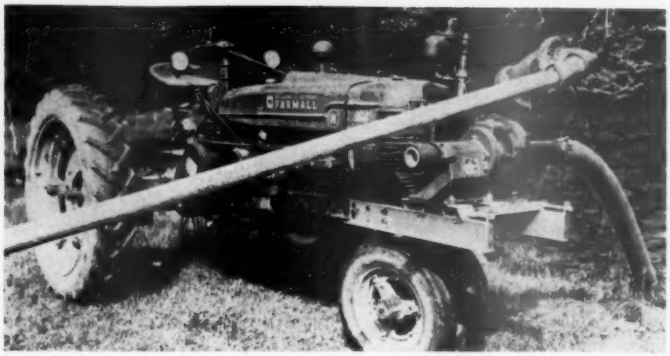
Lausen engine-driven, self-priming unit on "lawn mower" mount. Close-coupled.

GOULDS IRRIGATION PUMPS

NOTE: A dependable pump is the heart of any irrigation system. Write us today for your copy of Goulds new irrigation pump bulletin. Make it your Pump Handbook for irrigation projects!

Goulds Pumps Inc. • Seneca Falls, N.Y.

What's New *In* Irrigation Equipment

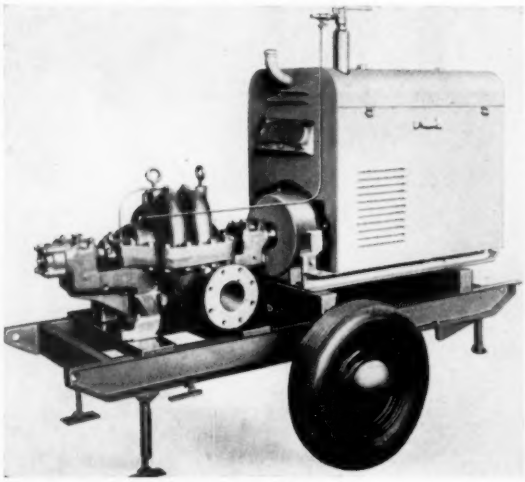


This pump is mounted on the front of a farm tractor and driven by a belt from the engine pulley. It is taking water from a local source and supplying it to a sprinkler irrigation system. The pump is made by Marlow Pumps, Ridgewood, N. J.

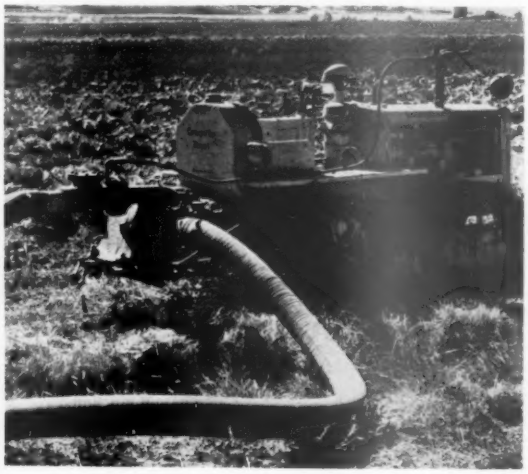
Left. Here is a vertical turbine pump used to draw water from a well for irrigation purposes. It is capable of pumping a large volume of water per minute. Made by Worthington Pump and Machinery Corp., Harrison, N. J.

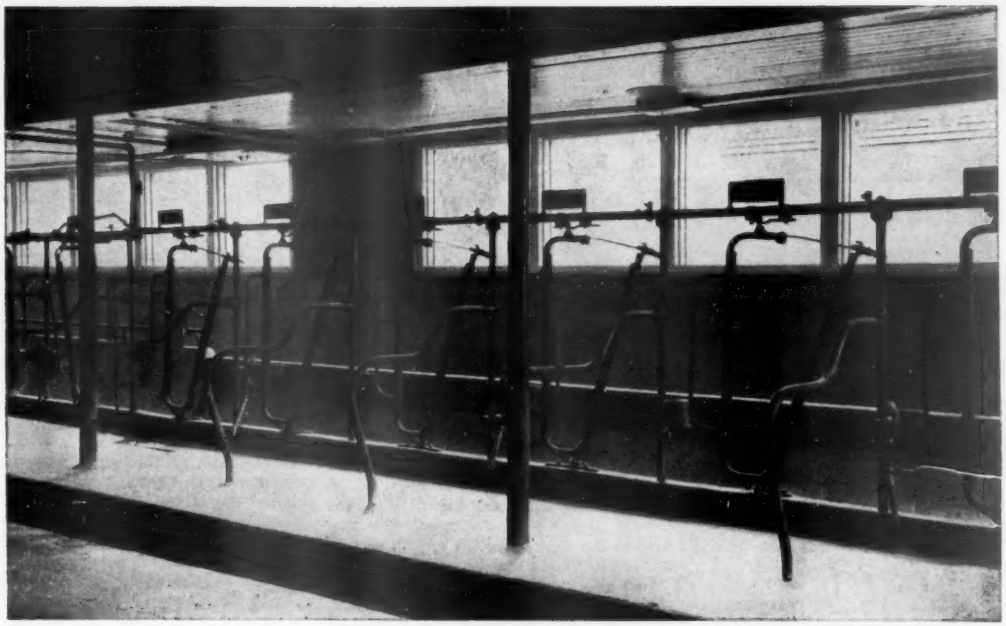
Right. This portable irrigation pipe is made to couple and uncouple easily. It is merely pushed together and takes but a twist and a pull to get apart. It utilizes a new type ball coupler. Manufactured by W. R. Ames Company, San Francisco, Cal.

This self-powered pump has a capacity of 1200 gallons per minute at 125 pounds pressure. The source of power is a Chrysler engine. Made by Goulds Pumps, Inc., Seneca Falls, N. Y.



Here is a pump which is driven by a caterpillar diesel. It is being used here as a booster from a ground surface water source into sprinkler irrigation. A line running from the discharge of the pump to the exhaust of the engine uses the exhaust pressure to prime the pump prior to operation. Manufactured by Food Machinery and Chemical Corp., Peerless Pump Division, Los Angeles, Cal.





Daylight is beneficial . . . and Free!

WHY NOT MAKE THE MOST OF IT?

When farm structures are built or remodeled to take advantage of daylight and sun heat, the farmer gains in three ways. His buildings stay warmer, drier and benefit from the germicidal effects of the sun. Livestock and poultry respond to these improved conditions in better health and in production of more milk, meat and eggs. And buildings are more comfortable to work in.

It is not simply a matter of adding more windows. Other factors should be considered:

1. LARGER WINDOW UNITS WITH UNDIVIDED PANES. Much daylight is shut out by cross-members and frames. Since larger panes also are easier to wash, they usually are kept cleaner than small panes, hence transmit more light.

2. PLACEMENT OF WINDOWS. To get maximum benefit from the sun, orient the building so the larger windows face south—to let in winter sun for warmth.

3. INSULATION. In winter keep more heat inside by insulating all windows. The easiest way is with *Thermopane** insulating glass; two panes with dry air hermetically sealed between them. *Thermopane* stays in all year—requires no seasonal handling.

Thermopane provides many benefits that pay off year after year:

- it lets in the radiant heat of the sun, while reducing outward flow of conducted and convected heat.
- because the inner pane stays warmer, condensation is reduced. This means less rotting or rusting of window frames and the structure beneath.
- less condensation means cleaner windows, and thus more daylight brought in.
- *Thermopane's* insulation helps guard against cold. More sun heat and animal heat is *kept* inside.
- drafts at windows are reduced because of the warmer inner pane. With warmer air, the ventilating system carries off moisture more efficiently.

Thermopane is easily installed—in fixed sash or windows that open. It is sold by glass and building supply distributors and dealers. Write for our book on "Improved Farm Building Daylighting".

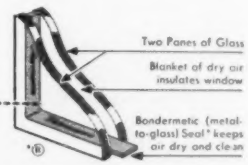
L O F GLASS

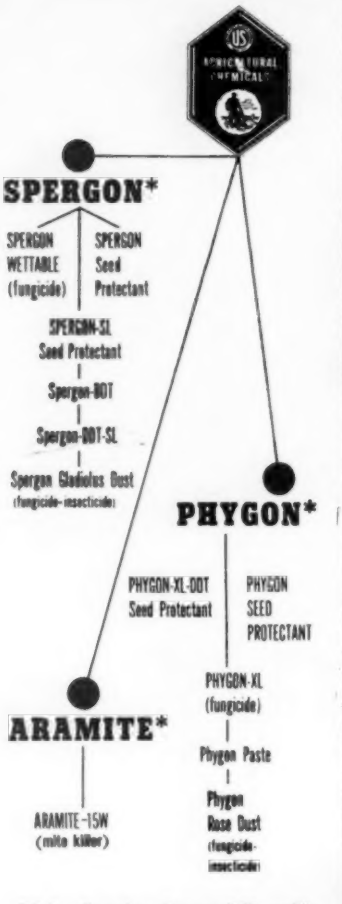
Thermopane

LOOK FOR THE NAME ON THE SEAL BETWEEN THE PANES

LIBBEY·OWENS·FORD GLASS COMPANY

2561 NICHOLAS BUILDING, TOLEDO 3, OHIO





This Agricultural Family Yields Big Savings

Seedling blights, plant fungus and mites can rob farmers of countless bushels of potential yield, this year when we can least afford it.

The Naugatuck family tree stands ready to serve 1951's all-out production effort by saving your crops from such ravages as these.

*Reg. U. S. Pat. Off.

UNITED STATES RUBBER COMPANY
NAUGATUCK CHEMICAL DIVISION
NAUGATUCK, CONN.

With the County Agents

This Is Paquette Reporting . . .

. . . for the National Association of County Agricultural Agents. County Agent Lucien Paquette is the chairman of the NACAA Information committee and makes arrangements for the material that appears on this page.—Editor

OREGON AGENT STARTS BEEF CATTLE ASSOCIATION—Will beef cattle associations some day be as plentiful as DHIA associations are today? Gilliam County Agent Ernest Kirsch, who has started the first beef bull association of its kind in the nation, thinks they may.

Gilliam county beef men and Kirsch got together last summer and organized the Gilliam county Beef Cattle Improvement association for the purpose of feed testing beef bulls. On November 1, 1950, 12 purebred beef breeders brought 34 bulls to Gilliam county fair grounds for feed testing. Management of the program rests with the association and its board of directors.

Kirsch got the ball rolling when he convinced C. K. Barker, Condon Hereford breeder and now president of the association, that cattlemen should start using recent research information which proved that feed efficiency was hereditary. Barker contacted a number of other breeders and convinced them that a program should be started. These breeders got together with Kirsch and drew up a program outline. The program set forth the purpose and listed the eligibility of beef calves, health requirements and the conditions under which the bulls would be tested. It also estimated the cost and as a conclusion, it provided a form which could be used to consign calves to the test. Each stockman put up $100 for each calf he consigned.

County Agent Ernest Kirsch shows how feed is weighed to each calf in the feed test. The short-handled fork has a scale in the handle.

Complete records of the feed consumed by each calf during the winter was kept and the calves were weighed every 28 days during the test and rate of gain determined. Members of the association had a regular meeting on each weigh day. At that time, they made suggestions as to management and any improvements they thought desirable.

Climax of the program was a field day, April 12, when a crowd of 250 ranchers and agricultural researchers from Oregon, Washington, and California was on hand to get the results of the test.

The most efficient bull had a feed cost of 13.1 cents a pound of gain for the period of the test. The animal owned by Sid Seale, Condon, gained a 2.6 pounds a day, weighing in, November 15, at 45 pounds and checking out, April 4, at 805 pounds.

Fastest gainer was a bull owned by Luren Maley, Condon, which put on an average of three pounds a day at a cost of 15.3 cents a pound. Starting weight was 555 pounds, ending weight 980 pounds.

Highest per pound of gain feed cost was 20.1 cents, and the average was 16.4 cents. The more efficient bulls are destined to become herd sires for the owners, while those with less favorable records are being placed on the market.

Kirsch and C. E. Barker, president of the association, said plans are to repeat the experiment next fall.

WHAT'S YOUR SCORE?—Has your state sent in a story for this column this year? The national committee has set a goal of at least one item per state for 1951, but unless you have the same goal, we'll fall short of the mark.

In these times of mobilization, farm labor problems, grassland projects, and county agents relationships with civilian defense and other agencies, the field is big and broad for excellent county agent stories of WHAT, WHY, and HOW.

From the National USDA Coordination and Relation committee report presented last November to the Chicago convention by Chairman Charles Messer, New York, two sections are quoted here. They seem quite pertinent at this time.

30 Years *in the* Tall Timber

The experience of Associated Plywood Mills dates from 1921. That is a long time in the relatively young plywood industry—long enough to mark APMI as one of the pioneers in the development and growth of this important building product.

The rich, rain forests of Oregon yield the fine Douglas fir that comes to APMI mills. These mills are among the largest and most modern in the plywood industry. They produce quality exterior and interior panels that are grademarked and trademarked.

APMI plywood is available in major building and distribution areas. Your inquiries are welcomed at our general offices, or at APMI sales warehouses.

APMI

APMI SALES WAREHOUSES: 925 Toland St., San Francisco; 4814 Bengal St., Dallas; 4003 Coyle St., Houston; 4268 Utah St., St. Louis; 1026 Jay St., Charlotte, N. C.; Eugene and Willamina, Oregon.

ASSOCIATED
PLYWOOD MILLS, INC.
GENERAL OFFICES
EUGENE, OREGON

Only the Adoption of

VINELAND POULTRY LABORATORIES 4-POINT IMMUNIZING PROGRAM

Can Stamp Out

NEWCASTLE DISEASE!

• "Parental Immunity" is the very heart of the entire problem pertaining to the immunization of chicks against Newcastle Disease. The absence of parental immunity in baby chicks is the basic reason for outbreaks of Newcastle Disease in birds under 10 days of age. Breeders, hatcherymen—as well as poultrymen—must vaccinate all their layers with a Wing-web, Live Virus Newcastle Disease Vaccine in order to insure that baby chicks hatched will carry this parental immunity. Such parental immunity in baby chicks usually lasts from 10 days to 4 weeks.

Research has definitely established that breeders vaccinated with a Killed or Intranasal vaccine do not transmit parental immunity to their offspring. The result is that poultry farms are constantly being re-populated with new chicks that are susceptible to Newcastle Disease from the moment they are hatched.

It is our opinion that only the use of a Wing-web, Live Virus Newcastle Disease Vaccine by everyone in the poultry industry will help end confusion and bring this disease under control.

Successful safeguarding of birds, therefore, depends upon the poultry industry following this 4-point immunizing cycle—which has been endorsed by leading pathologists and the majority of the breeders throughout the country:

(1) Hatcheries must insist that their breeding flocks are vaccinated only with Wing-web, Live Virus Newcastle Vaccine.

(2) Poultrymen must demand that baby chicks they purchase come from layers which have been vaccinated with a Wing-web, Live Virus Newcastle Vaccine. Such chicks carry parental immunity. This immunity usually lasts from ten days to four weeks.

(3) The application of a Wing-web, Live Virus Vaccine to parentally immune baby chicks will assure broiler and roaster growers protection against Newcastle Disease until the birds are ready for market. The vaccine may be administered to PARENTALLY IMMUNE baby chicks AT ANY TIME BEFORE they are three weeks of age. However, we recommend that vaccination be deferred until the birds are 3 to 4 weeks of age. Science has definitely established that the older the bird, animal, or even human, when vaccinated, the more durable the immunity.

(4) Birds held over as layers and breeders must be re-vaccinated with a Wing-web, Live Virus Newcastle Vaccine before coming into production.

Mobilize Now

Consequently, if the above recommendations are followed we believe the problem of Newcastle Disease can be overcome. Yes, the poultry industry should mobilize to control Newcastle Disease now . . . and the most effective strain and method of application must be employed. **Only a Wing-web, Live Virus Vaccine** should be adopted by hatcherymen and **all** poultrymen as standard operational procedure in immunizing birds of all ages against this disease.

VINELAND POULTRY LABORATORIES, the recognized leader in the field of poultry biologics for more than 37 years, has the answer to eradicating Newcastle Disease. Among commercial poultrymen, leading hatcherymen, and in scores of agricultural colleges and experiment stations, VINELAND Wing-web, LIVE VIRUS VACCINE has been acknowledged as the first line of defense against Newcastle Disease.

POSITIVE INSURANCE AGAINST

TRACHEITIS and FOWL POX

with VINELAND VACCINES

Tracheitis and Fowl Pox Vaccines may be administered at one handling of the birds. The cost? Small indeed, especially when you consider that immunity is lifelong.

Order your Vineland Newcastle Tracheitis and Fowl Pox Vaccine from your dealer today. If he cannot supply you, send us his name and address along with your order and immediate shipment will be made. All transportation charges prepaid by us. **Ask for free booklet covering every phase of Newcastle, Tracheitis, Fowl Pox and Pullorum Diseases.**

VINELAND POULTRY LABORATORIES

FOUNDED IN THE YEAR 1914 — **VINELAND, NEW JERSEY**

"VACCINATION is the first step in Poultry SANITATION"

FREE To All County Agents and Vo-Ag Instructors

So that you may be better acquainted with the merits of our Accuracy Attested

KO-EX-7 Brom Thymol Mastitis DETECTORS

with the Green Spots, which tell the Degree or Severity of the Infection, we will send a full size box—Free—Write today—

STERLING RESEARCH CORP.
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PIONEER DAIRY FEEDS — RED COMB POULTRY FEEDS — PIONEER HOG FEEDS

Efficient feeding programs for all livestock and poultry that produce "Quality Results at Low Cost".

WRITE FOR FREE BOOKLETS AND CIRCULARS.

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141 W. JACKSON BLVD.
CHICAGO 4, ILLINOIS

"When this committee reported a year ago it recognized that relationships with other agencies and with their personnel is a continuing and ever changing problem because the situation is always changing. First, in the matter of the personnel of the various agencies; second, because Congress has changed laws affecting them; and third, because national and state administrators change or make changes from time to time.

"The work of your committee has revealed many instances of good cooperation on the county level. No specific plan is suggested for better coordination and relations between extension and other USDA agencies. This committee recommends that insofar as possible, county agents take the initiative in attempting to work harmoniously and effectively with the other workers on the county level.

★

Pasture renovation is a statewide project with Minnesota county agents. Here, Herman Vassen (left) Cottonwood county, and A. B. Hagen, Murray county, discuss the proper way to take a soil sample.

★

COUNTY AGENT HONORED—R. H. McDougall, Pennsylvania Information committee member, rounded up this interesting story about County Agent Eby.

"After benefiting for 19 years from his agricultural leadership, the Carnegie, Pa., Rotary club at its recent 20th annual rural-urban meeting decided to turn the tables and make Allegheny County Agent Henry R. Eby honor guest.

"Charles R. Puhlman, Rotary rural-urban chairman, said the testimonial to Agent Eby was a recognition of his long service to the club in helping to make these annual city man-farmer meetings among the most successful of all their Rotary affairs.

"From the time the rural-urban meetings were started by the Carnegie Rotarians 20 years ago, Mr. Eby has attended every one, although not a member of the club. On a number of occasions he has been the speaker, and at others has assisted in developing programs.

"Although located in the Pittsburgh industrial area, the Carnegie Rotary club has consistently recognized the importance of agriculture. It has recognized the interdependence of town and country, along with the need for good relationships between the two.

"In paying honor to Mr. Eby, who is a member of the Rotary club of Pittsburgh, the Carnegie club members said he has lived up to the Rotary motto of "Service Above Self." An outstanding county agent, Mr. Eby, since 1922 when he was named to his post, has championed agriculture in a community known worldwide more particularly for its heavy industry. Born and reared on a farm near Mt. Joy, Pa., he early decided to make agriculture his life work. After graduating in agriculture from the Pennsylvania State college, he joined its staff in agricultural extension and was assigned to Allegheny county."

★

Farm Jobs Critical

Farm operators and assistants have been added to the list of critical operations by the Labor Department.

This action is a result of an intensive study by the Inter-Agency Advisory committee, on which the USDA is represented. The Department of Agriculture acts as the official claimant agency for critical farm manpower, machinery, and other equipment before other defense agencies.

The list of critical occupations is used as a guide in the selection of manpower for the Armed Services. It is used by the Department of Defense for considering requests for delay in call to active duty of reservists and the National Guard. Also, Selective Service makes the list available to local Selective Service boards as information to assist them in the proper classification of workers. The addition of farm operators and assistants to the list will aid Selective Service in considering cases of key farm workers needed to produce agricultural supplies for defense.

Spray Calculator

Available for a price of 25c is a new spray calculator designed for the purpose of simplifying the mixing of insecticides or herbicides for farm spraying.

Using this new calculator, the sprayer needs to know only the dosage of that particular chemical recommended for his area. This is usually given in pints per acre.

By setting these figures on the circular disc of the calculator, he can then read in an instant the quantity of chemical required for each tank of water.

The calculator is distributed by the Engine Parts Manufacturing Company, Cleveland, O.

SAVE TIME SAVE MONEY

by quick, accurate weighing of feed, produce, seeds, and many other items on the farm. Measurement by weight is exact and rapid with easy-to-read Hanson Scales listed in the Nasco catalog.

HANSON SCALES

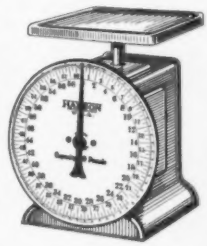
DAIRY SCALE

The standard milk scale of the dairy farmer for accurately recording each cow's daily yield. Capacity 60 lbs. by 1/10 lb., 8" x 2" x 17"

Regular Price $6.50—Special Price to Ag. men $4.75. Immediate Delivery.

60 POUND UTILITY SCALE

A heavy duty scale that covers a wide range of utility weighing on the farm. Can be used for canning and food measurement in cooking as well as for many other every day weighing jobs. Capacity 60 lbs., by 2 ounces, 10½" x 7½" x 8"—Price $6.50.



All Purpose VIKING

A rugged farm scale handy for use around the barn, chicken house, or feed bins. Adjusting screw allows indicator to be set at zero to offset weight of pail, scoop or other container so that net weight is shown on dial. Available in six weight capacities:

H 8930, Capacity 300 lb..... $7.50
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The Agricultural Leader's Supply House
FORT ATKINSON, WISCONSIN
NASCO

Even crops can tell you when they're hungry

As summer advances, anyone with the "know-how" can spot, at a glance, evidence of plant food starvation in growing crops. As a leader or teacher in agriculture, you too can know these hunger signs.

Once you have learned to understand the "sign language" of plants, you can often tell just by looking at a growing plant whether it is drawing from the soil all the nitrogen, phosphorus, potash and other elements it must have to produce healthy, high-yielding crops.

A deficiency in these essential elements will affect the plant's appearance in some way which will tell you just what is short. Here are some of the "hunger signs" in corn, for example:

- Stunted yellowish-green early growth with later yellowing "down the midrib" and death of lower leaves indicates nitrogen deficiency.
- Purple color in leaves indicates phosphorus deficiency.
- Bottom leaves dead; yellow striping between veins of upper leaves (condition known as "white-bud") indicates zinc deficiency.
- Scorching along the edges of lower leaves indicates potash deficiency.
- Regular yellowish-white stripes on leaves indicate magnesium deficiency.

Other crops also show "hunger signs" which can be recognized at a glance if you know their sign language.

For a number of years, one of the main objectives in our Plant Food Research Laboratory at Hammond, Ind., has been to contribute to the elimination of "hidden hunger" in the nation's crops.

To keep yourself currently posted on new developments in the plant food field, we suggest you make it a point to get acquainted with your local Authorized Swift Agent or dealer. He has interesting case histories, literature and facts which may be of value in your work. He can also arrange a visit with one of Swift's Plant Food field representatives. These men are specially qualified and trained to assist you in solving any plant food problem.

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RED STEER
Plant Food

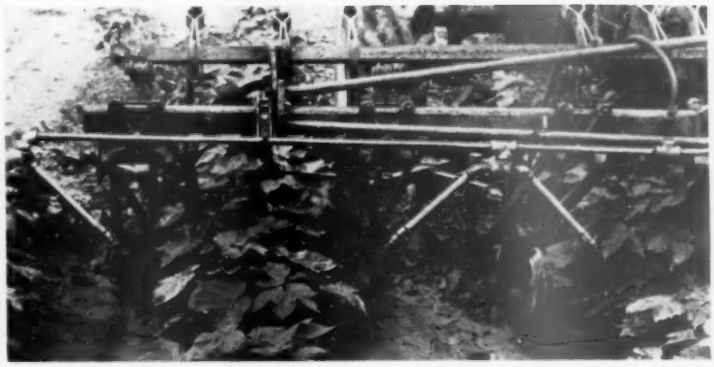
Buy Swift's Plant Foods at the sign of the RED STEER

Ask about *Bionic* & Brimm Swift's Specialized Crop Makers

Aldrin and Dieldrin Are . . .

Insect Killers

By M. H. Keel



Correct nozzle position for applying aldrin to control boll weevil with two nozzles per row.

● IT IS QUITE apparent that insecticides are going to have an even greater application this year than during 1950 when probably the greatest volume of insecticides in history for agricultural use was purchased.

This is not because insect infestations will necessarily be greater, but because more and more farmers appreciate the value of full-season insect control as an essential of farm management. Farmers are becoming better acquainted with the fact that insecticides pay for themselves through increased crop production and up-grading of yield.

In fact, production records for 1950 show that cotton farmers who followed a complete insect control program made good yields despite the worst boll weevil infestation in cotton belt history.

A new and efficient insecticide that is playing an important part in combatting grasshoppers and cotton insects is aldrin. It was used on a commercial scale for the first time last year after two years of extensive testing in both the United States and Canada.

Aldrin Shows Promise

Aldrin, a chlorinated hydrocarbon, has been approved by the United States Department of Agriculture for control of certain cotton insects and grasshoppers.

The lethal dosage of aldrin against these pests is amazingly small. Just four ounces per acre will give control of boll weevil and some other pests on mature cotton—one to two ounces in early season. Only two ounces of aldrin are required for the control of 'hoppers. A pound is sufficient coverage for eight acres.

Aldrin is quick-killing. Most of its lethal work is completed within a few hours—by contact, ingestion, and vapor fumigant action. Because of its quick kill, its effectiveness is less likely to be nullified by subsequent rain.

Aldrin does not injure cotton foliage or other plants when used at recommended dosages and leaves no objectionable residues in the soil. Under summer conditions, a week is the limit of its residual effect.

Aldrin Stops Grasshoppers

In the summer of 1950, 40,000 acres of Arizona rangeland, with 15 to 35 grasshoppers per square yard, were treated with an aldrin spray in a campaign conducted by the Bureau of Entomology and Plant Quarantine in collaboration with local agencies. Results: 91 percent kill in 24 hours, 96 percent kill in three days, 98 percent in five days.

Many growers last year used aldrin to control cotton pests. Approximately 28 million pounds of aldrin dust and 650,000 gallons of aldrin spray were used on 8 million acre-applications in 1950. Aldrin definitely proved its value in controlling the boll weevil, thrips, tarnished plant bug, rapid plant bug, and the cotton fleahopper. Aldrin is compatible with other

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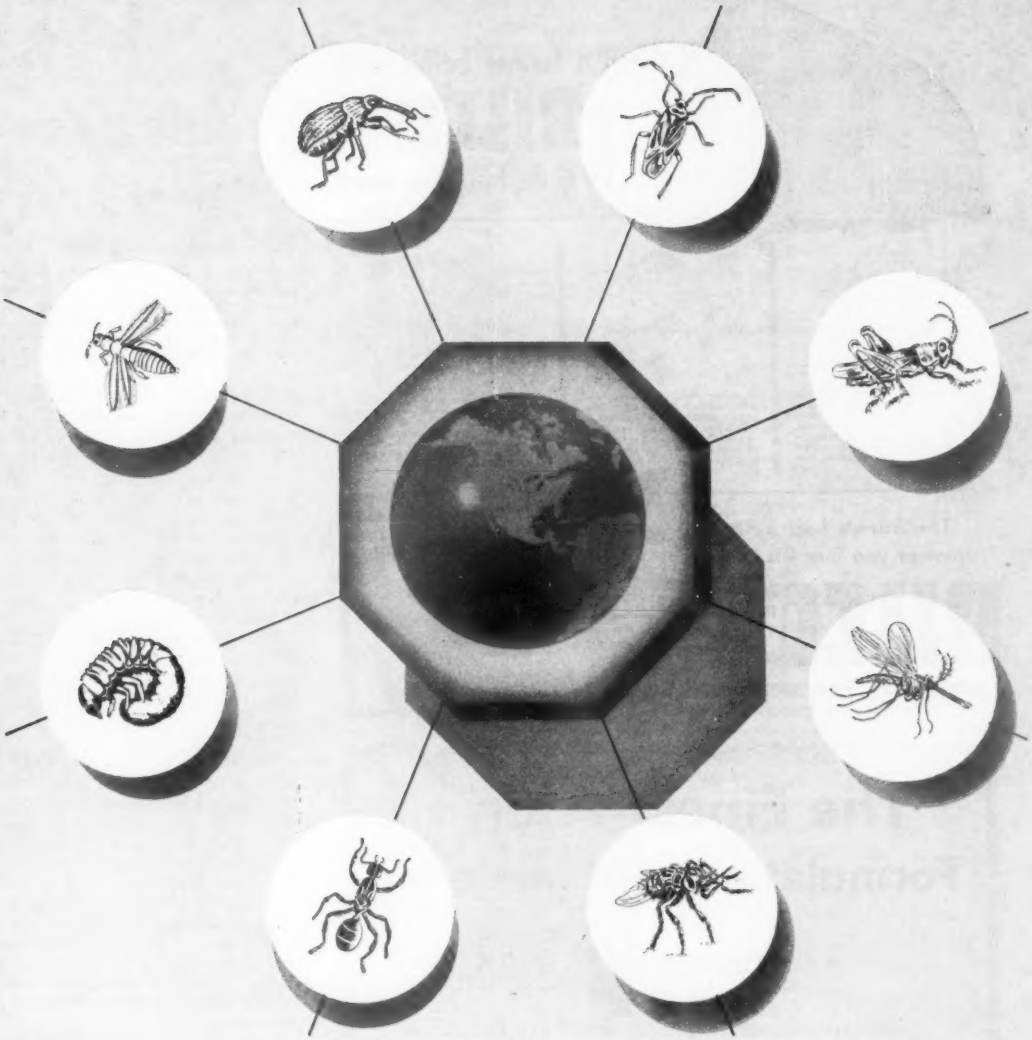


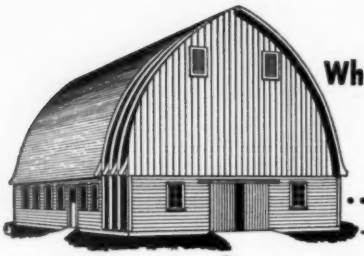
aldrin · dieldrin *INSECT CONQUERING CHEMICALS*

By the alert and unceasing efforts of its Reasearch Laboratories Julius Hyman and Company has earned a reputation for the originality and effectiveness of its contributions to the control of many serious insect problems confronting the farmer. ALDRIN and DIELDRIN represent two major accomplishments of these laboratories in creating chemicals with greater insect killing power at amazingly low dosages. Today ALDRIN and DIELDRIN are in worldwide use wherever scarcity, famine and plague causing pests are threats to agricultural production and public health. Your request for descriptive literature and information concerning formulations and application of ALDRIN and DIELDRIN will receive immediate attention.

Julius **HYMAN** *& Company*

DENVER, COLORADO

HELL CHEMICAL CORPORATION, New York City, are exclusive distributors of unformulated Aldrin and Dieldrin in the United States



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. . . then raised into position with poles and ropes. Steel angle irons fasten them at the sill, making a single jointless member from sill or plate to ridge. All rafters for an average barn are erected in less than a day.

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Coming In July
Better Farming Methods
Third Annual Summer Buying Guide

Two plants illustrating effect of earlier fruiting of cotton following thrips control with dieldrin. Plants were taken from adjacent rows. Untreated and thrips-injured plant is on the right with longer stems, fewer bolls than the dieldrin protected, healthy plant.

insecticides and can be mixed with DDT when bollworm is present.

Latest reports indicate the effectiveness of aldrin for other insect infestations. Thrips on onions were controlled for three to seven days after aldrin spray. In 24 hours after application, aldrin gave 98 percent control of fall armyworm on 150 acres of wheat. Aldrin on oats knocked down 50 percent of pupae and adult armyworms within 14 hours, and 95 percent in 24 hours. In white clover, adult cut-worms were all dead in seven days, and all pupae were found rotting.

The newly developed insecticide, dieldrin (compound 497), companion to aldrin, may prove even more successful in many applications, especially where long residual effectiveness is advantageous. During the past season, more than 60,000 acre-applications of dieldrin were made with outstanding success against cotton pests and a wide variety of other insects.

Because of residual activity dieldrin may well prove to be a valuable weapon for early season control of cotton insects. In this regard, the use of dieldrin will aid earlier fruiting and maturity where thrips, aphids, fleahoppers, and boll weevils alone or in combination cause damage every year.

Label approval for dieldrin has been granted by the USDA for control of cer-

The second tractor-sprayer application of aldrin to cotton for thrips control. This sprayer is using one nozzle per row to apply one gallon of spray per acre, simultaneously with cultivation.

When writing advertisers please mention *Better Farming Methods*

tain cotton insects in 1951. Approval for use against a wide variety of insects is anticipated during the year. Until then, except for cotton insects, dieldrin is being used only on an experimental basis.

Both aldrin and dieldrin have shown excellent results in the control of soil insects such as wireworms, southern corn rootworm, and white grubs. In all tests flavor and color of vegetables growing in treated soil remained normal.

Insecticide formulations containing aldrin are available under many brand names.

★

Electricity May Aid Dusting

Laboratory tests by Michigan State college researchers show charging of dust particles of normal dusting compounds gets 5-10 times better coverage than through normal dusting processes.

Fine dust particles of the fungicides and insecticides are charged with from 12,000-20,000 volts as they emerge from the nozzle of a regular commercial dusting machine. This high charge is held for several seconds. With dusts blown

Henry D. Bowen, Michigan State college, developed this electrostatic dusting process. This system of dusting will be tried commercially this year.

at a velocity of a mile a minute, it permits them to travel a great distance before losing the charge.

Plants develop the opposite charge, and like a magnet, attract the charged particles. The underneath side of leaves and sides of the plant opposite the stream of dust also draw the particles.

Laboratory tests showed 11 times as much dust deposited on plants at four feet distance when particles were charged than when the same apparatus was used with no charge applied to the insecticide.

In a wind tunnel test under ideal conditions, more dust was accumulated on plants at 32 feet from the nozzle when particles were charged than at four feet away when uncharged.

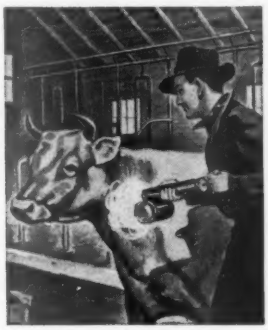
Scientists feel certain the effective charge can be retained in the dust particles long enough to dust the tops of normal height orchard trees.—*Earl C. Richardson, extension editor, Michigan State college.*

GULF
Livestock Spray

KILLS FLIES, FLEAS, LICE, TICKS, MOSQUITOES AND GNATS!

REPELS STABLE FLIES, HORN FLIES, SAND FLIES, BUFFALO GNATS!

GUARANTEED TO GIVE SATISFACTION, OR YOUR MONEY BACK



Gulf Livestock Spray is a *big help* in these ways—just follow directions:

1. Quiets cows at milking time.
2. Reduces milk loss due to insect annoyance.
3. Imparts no odor or taste to milk.
4. Improves appearance of animals' coats.
5. Repels stable flies, horn flies, sand flies and buffalo gnats.
6. Kills flies, fleas, lice, ticks, mosquitoes and gnats.
7. Is economical to use.

GULF LIVESTOCK SPRAY has a time-tested, dependable pyrethrin formula

GET GULF LIVESTOCK SPRAY

. . . at your implement dealer's, milk plant, feed store, Gulf station. Or call your Gulf distributor.

GULF

Get these dependable Gulf products too: Gulflube Motor Oil—Gulf Farm Tires—that Good Gulf Gasoline—All-Purpose Farm Grease—and many others.

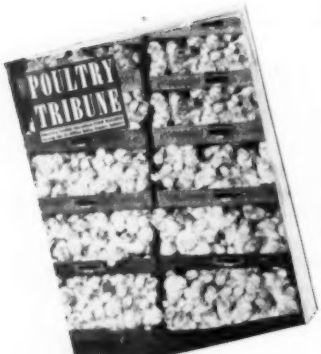
Hello Friends!

This is Your CHANCE

Remember me? I used to greet you every month when I was editor of Better Farming Methods. Now, I'm editing Poultry Tribune to help one-half million readers make poultry a more profitable business. Alert poultrymen look to Poultry Tribune for timely and up-to-date poultry ideas.

From my nine years of experience as a vo-ag teacher, I know that Poultry Tribune can be helpful to you, too. It can supplement the references needed by the vo-ag student who has a supervised poultry program. Poultry Tribune can be used also for special assignments, oral reports, and class discussions. The poultry judging contest, which appears in three of the winter issues, makes an excellent teaching aid.

Maybe Poultry Tribune isn't on your magazine rack, but *this is your chance* to get a free copy. Fill out the coupon below and return it to us. After you have had a chance to review it, I know that you will want to see a copy every month.



County agents and county 4-H club agents also may send for a free copy.

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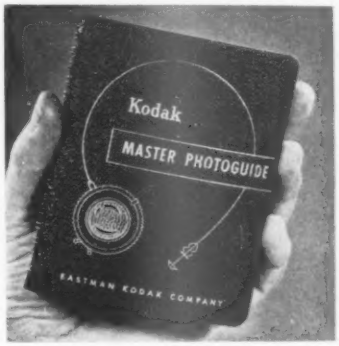
Kodak Sells Exposure Guide

The answers to many questions concerning photography will be found in the new Kodak Master Photoguide just issued by the Eastman Kodak Company. Answers to many questions are written in simple, easy-to-understand, and easy-to-apply manner. The book sells for $1.75.

Exposure data and other information in the book is slanted toward still photography with black-and-white or color



films. However, it is designed for use both with and without an exposure meter. Motion picture photography is not covered by the guide.

The book can be purchased from the Eastman Kodak Company, Educational Service Bureau, Rochester 4, N. Y., or through any authorized Kodak dealer.

★

Great Lakes Steel Corporation Previews New Farm Film

On April 24, approximately 125 farm magazine and newspaper editors, radio and television men, college agricultural workers, and USDA personnel met at Iowa State college, Ames, Ia., to see the first showing of the film, "Arch Against the Sky."

This film, sponsored and made by the Great Lakes Steel Corporation, Stran Steel Division, shows their newest farm building, the Quonset 32′ x 48′ corn drying and storage building. Represented at the preview were men from 16 states and the District of Columbia.

One of the highlights of the day meeting was a trip to an Iowa farm near Minburn, Ia., where one of these buildings has been erected and is in use. Here guests of the company saw how one Iowa farmer artificially air dried 7,000 bushels of ear corn last fall without any evidence of spoilage during the winter and spring months.

Featured at the meeting in Memorial Union, Iowa State college, were short talks by William Hukill, USDA agricultural engineer; H. J. Barr, head of the agricultural engineering department, Purdue university; Hobart Beresford,

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DAIRY COMPUTERS

You will be amazed at the simplicity and speed of this mathematical genius.

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NATIONAL FARM BOOK CO.
Viroqua, Wisconsin

Here is an interior view of the corn drying and storage Quonset building as used on an Iowa farm. The corn is dried by a 42-inch fan driven by a 5 horsepower motor. Drying costs for this amount of corn have been economical.

head of the agricultural engineering department, Iowa State college; and Ed Ellison, marketing specialist, USDA. Host for the occasion was J. E. Bowen, general manager, Stran Steel Division of Great Lakes Steel Corporation.

The motion picture is a 16 mm. black and white, sound film. It shows how this Quonset type building is used to store corn profitably and enable the farmer to pick his corn regardless of the moisture content.

The film is available for showings by ag teachers and county agents. It will be found listed in the Visual Aids section of BETTER FARMING METHODS.

★

"Dodder" Control In Alfalfa

The California Spray-Chemical Corporation has recently reported a new control for dodder in alfalfa.

The company states that CONTAX (3 pints) and fuel oil (10 gallons) made up with water to 100 gallons and applied at 100 gallons per acre to alfalfa immediately after the first cutting is off, gives a high degree of control of dodder.

The company notes that this is the first time to their knowledge that dodder has been controlled by other means other than plowing and crop rotation.

★

Farm Stock Needs Salt

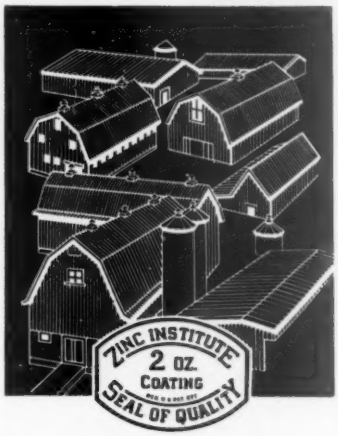
Research projects in several agricultural experiment stations indicate the importance of making salt readily available to farm animals.

The International Salt Company, too, has conducted experiments which show that farm animals need salt. Their product, Blusalt, is fortified with trace minerals. In addition to supplying salt, this helps insure farm animals against deficiencies of these trace minerals.

On All Your Farm Buildings

GALVANIZED SHEETS

Give You All 3!



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Now, More Than Ever...PROPER CARE PAYS!
When material shortages threaten to limit new construction and replacement, careful maintenance of present structures is essential. A few simple steps with very little labor can make galvanized roofing a lifetime material. The valuable booklets described below will show you how.

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Without cost or obligation, send the illustrated booklets I have checked.

- ☐ Facts About Galvanized Sheets
- ☐ List of Metallic Zinc Paint Mfrs.
- ☐ Directions For Applying Galvanized Sheets
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Aldrin kills grasshoppers surely and quickly by all three methods . . . feeding, contact and fumigant action.

Just two ounces per acre stop even the worst infestations. That's why the cost of aldrin-izing is so low.

Aldrin is the national hopper stopper.

SHELL CHEMICAL CORPORATION

500 Fifth Avenue, New York 18
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What's New In "AG" Chemicals

Grasshopper Diet Outlined

Chlordane, aldrin, and toxaphene are the materials to use in battling grasshoppers. Use of any of these will give quicker kills and the killing effect will last longer than any other available insecticides. They are easy to find on the market and can be used in farm sprayers and dusters.

The extension service again is putting emphasis on the importance of applying chlordane, aldrin, or toxaphene *early* while the hoppers are still hatching and *before* they spread into the fields.

Most cropland hoppers lay their eggs in stubble fields, headlands, field margins, ditches, right-of-ways and fence rows. By treating these places when the hoppers are still small you keep them from moving into your fields later.

Urge farmers to get their supplies of the recommended chemicals right away. When an emergency comes up which calls for control it may not be easy to find chlordane, aldrin, or toxaphene in a hurry.

★

Sprayer Equipment Short

Lack of materials may force a shortage of sprayers and dusters necessary for farmers to apply insecticides.

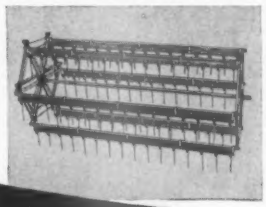
According to the National Sprayer and Duster Association, the need for sprayers and dusters in the South is expected to be great this year. Any interruption in production due to lack of materials will seriously hamper the fulfillment of these needs.

Ag leaders would do well to encourage farmers to purchase now any equipment they may need for the remainder of the year.

★

This shipment, part of 13 tons, is being shipped by Julius Hyman & Company to Iran. It consists of the new insecticide, Aldrin, and is a rush order to be used in combatting a series of locust outbreaks. The shipment was flown to Iran, a distance of approximately 7500 air miles from Denver, Colo.

FOR DOWN-TANGLED, LODGED GRAINS, BEANS



HUME PICK-UP REEL

When grain goes down there's one best solution — the HUME Pick-Up REEL. It will pick up matted, down-tangled grain and soybean crops with an even, gentle action, without shattering or bunching. Fits every combine old or new. Is available practically everywhere. Write us for the complete story.

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Help Wanted . . .

Would you like to be an advertising salesman?

One of the nation's largest agricultural publishing organizations would like to hear from county agents and vo-ag teachers who have an interest in advertising sales work. Several members of its staff are ex-county agents and ex-vo-ag teachers.

If you are interested in the field of selling and want to have an opportunity to grow in this field, this may be your chance.

Write now to Box XY, care of Better Farming Methods, Mount Morris, Illinois.

Helpful Booklets
Turn to page 60

Insecticides Can Be Mixed

In fighting insect pests, entomologists find that in many cases a mixture of two or more substances does better work than any single one, says the U. S. Department of Agriculture.

For example, as a repellent against mosquitoes a three-in-one compound is better than any one of the three used alone.

A good example is a mixture of DDT and lindane, which is effective in protecting animals from attack by several tick pests. The DDT is a thoroughly good tick killer if the tick comes in contact with the DDT before it has fed on the animal's blood. But DDT is not nearly so effective once the tick has fed. Lindane will kill the tick while or after feeding, but will not protect the animal for long after spraying. Thus the combined spray mixture gets the ticks that are already there and also protects the animal from ticks coming after the spraying. The DDT remains protective for two or three weeks at least.

Toxaphene spray is an alternate treatment that has immediate effect and also endures.

These sprays are recommended for use in about as strong a mixture as is safe. These sprays should not be used for dipping, as either may poison the animals. Neither the toxaphene nor the mixed spray should be used on dairy cattle.

★

High Grain Yields Needed

Supplementing earlier requests for increased feed grain acreage in line with announced production guides, Secretary of Agriculture Charles F. Brannan today emphasized the need for action to insure the highest possible yields from the acres which are planted.

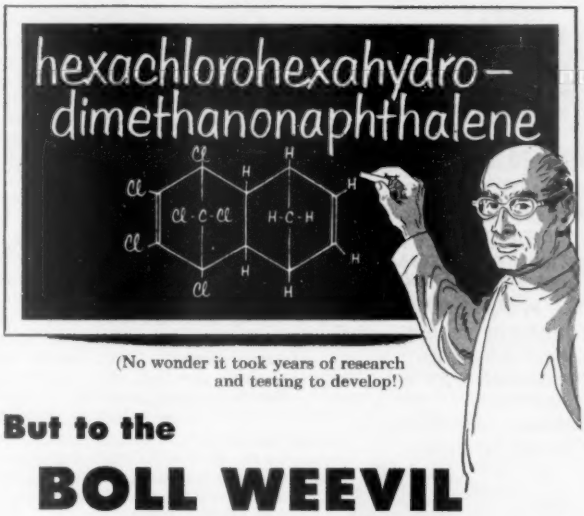
"Bringing corn and other feed grain planting up to the needed acreage totals is of first concern," the Secretary said, "and farmers in many areas are now reappraising their planting intentions. At the same time, it is obvious that production will depend not only on planted acreage but also on the yield attained on that acreage.

"While the uncontrollable factor of weather always has a lot to do with production, there are many things farmers can do to help insure better yields. With need for adequate feed grain supplies so great this year, they will want to follow the best possible production practices in every way. This will cover everything from proper preparation of the seed bed, efficient cultivation practices, fertilization, and control of pests, to the use of the best adapted seed.

"With corn planting time just ahead in most areas, I am urging farmers to give careful consideration to maximum production efficiency, including the use of the best adapted seed they can find.

To a chemist

aldrin *is*



(No wonder it took years of research and testing to develop!)

But to the

BOLL WEEVIL and his gang it's Murder!

Powerful aldrin is the latest weapon in the planter's war against insects. *Just one pound* of aldrin, properly diluted, controls boll weevils, thrips, tarnished plant bugs, rapid plant bugs, cotton fleahoppers and grasshoppers *on 2 to 4 acres* of maturing cotton.

aldrin

SHELL CHEMICAL CORPORATION

Aldrin is manufactured by Julius Hyman & Co., and is distributed by Shell Chemical Corporation, 500 Fifth Avenue, New York 18.

Aldrin is available under the brand names of leading insecticide manufacturers. Consult your local dealer and county agent.

YOUR INSURANCE
FOR *better* CROPS!

CORONA

CORONA

- ARSENATE OF LEAD
- MICRONIZED 50% WETTABLE DDT
- MICRONIZED WETTABLE and DUSTING SULFURS
- TREE WOUND DRESSING
- COROMATE (Ferric Dimethyl Dithiocarbamate)
- COROTHION (15% Wettable Parathion)
- CORONA "26" (Tri-Basic Copper Sulphate)

CORONA
AGRICULTURAL DUSTS

Protect vegetable crops with finely ground, carefully formulated and blended dusts, embodying such well known ingredients as BHC, Calcium Arsenate, DDT, Parathion, Rotenone, Toxaphene, Tri-Basic Copper Sulfate, Sulfur, Carbamates (Coromate, Corozate, Dithane). Use Corona for best results.

See your dealer or write for full information about Corona's New Brush and Weed Control Chemicals.

CORONA

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4-H News for CLUB LEADERS

New York 4-H'ers Celebrate

A quarter-century of progress in 4-H work will be highlighted at the annual New York State 4-H Club Congress to be held on the Cornell campus June 27-30. About 1,000 4-H members from all parts of the state will attend the silver anniversary of the event.

The Congress was started in 1922 as Junior Field Days and has been held annually except for the war years, said Albert Hoefer, state 4-H Club leader.

A reunion of members who have been delegates to the National Club Congress in Chicago and National Club camp in Washington, D. C., will bring some of the top members of the past 25 years to the anniversary celebration. Recognition for outstanding contributions to 4-H work in the state will be given at the annual banquet, June 29.

Other events include a program, "Progress for Better Living," presented by the DuPont Company; a look at some of the latest developments in agriculture and home economics; square dancing; and a talent show.

★

Dedicate New Center

The 4-H Clubs of America finally have a National 4-H Club Center, a dream which has become a reality.

The property, formerly the Chevy Chase junior college, is located in Washington, D. C. It was purchased by the National 4-H Club Foundation, Inc., a private corporation composed of land-grant college and U. S. Department of Agriculture officials.

At the present time, the property has been leased to the Department of Defense and, therefore, occupation by the 4-H Club Foundation is temporarily deferred.

E. W. Aiton, executive director of the National 4-H Club Foundation, is in immediate charge of plans for the Center. Funds for its purchase and operation are from contributions of 4-H Clubs, individuals, and other groups.

★

Tractor Maintenance School

The Standard Oil Company (Indiana) was host to approximately 40 4-H Club leaders, agricultural engineers, and USDA officials at their 4-H Tractor Maintenance conference, May 3-4, Chicago, Ill.

Representatives from eight Mid-western states attended the two-day meeting. In addition, personnel of the Standard Oil Companies of Indiana, Kentucky, and Ohio were in attendance. They are sponsors of this 4-H Club program.

Guy L. Noble, director, National Committee on Boys and Girls Club Work, presided at the opening session. Said Noble: "In the eight states represented at the meeting, enrollment of 4-H Club members in the Tractor Maintenance program has increased 62 percent between 1945 and 1950. In addition, project completions by members reached a new

Here is the new National 4-H Club Center located in Washington, D. C. near the Maryland line. The entire tract consists of 11 acres, 5 buildings, and adequate parking facilities. Plans call for the center to be operated on a year-round non-profit basis.

When writing advertisers please mention *Better Farming Methods*

Members enrolled in the 4-H Tractor Maintenance course steadily increase. Here Conger Reynolds, center, chairman of the youth committee and director of Public Relations, Standard Oil Company of Indiana, points to this progress. Flanking him are Ken Anderson, associate director, National 4-H committee, left; and R. A. Turner, 4-H Club specialist, Federal Extension Service, right.

high last year of 81 percent."

Nearly 180,000 volunteer local 4-H Club leaders and members in 47 states have received training in this 4-H Tractor Maintenance program since its inception in 1945.

On Thursday, these 4-H Club workers were guests of Standard Oil Company of Indiana at a luncheon in the Stevens hotel. Principal speaker was I. R. Kappler, vice president in charge of purchasing, Dearborn Motors Corporation.

He pointed out the outstanding contributions of American agriculture which this 4-H Tractor Maintenance program has made. He paid tribute to the Standard Oil Company of Indiana, the sponsor, as providing one of the more complete 4-H achievement units.

Dearborn Motors Corporation sponsors the poultry achievement award in the 4-H Club program.

Coming In July

The July issue of BETTER FARMING METHODS will be the annual Buyer's Guide.

In this issue you will find a special section which will feature many of the supplies and equipment which you need to operate your office or classroom for the year.

This section will be of specific help to you in ordering supplies for the coming year. Included in the issue will be helpful feature articles highlighting the use and care of supplies and equipment.

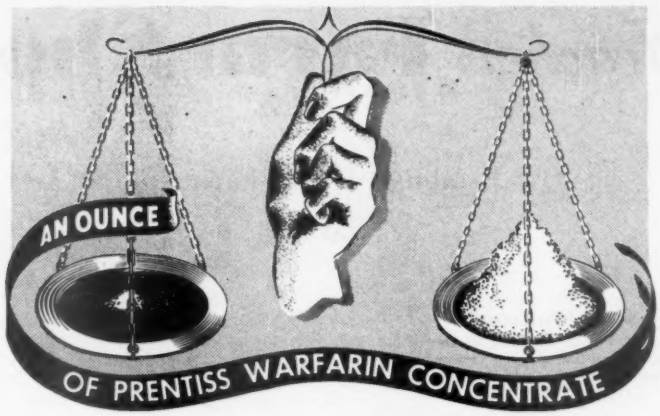
Watch for the July issue. Let it be your guide in purchasing needed supplies and equipment.

Puzzled . . .

A woman phoned her bank to arrange for the disposal of a thousand dollar bond.

"Is the bond for redemption or conversion?" a clerk inquired.

There was a long pause, then the woman asked: "Am I talking to the First National Bank, or the First Baptist Church?"



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Irrigation Booklets!
Turn to page 33

Teacher's Farm Shop

Establish Home Farm Shops As Part of Vo-Ag Training

By T. J. Wakeman
Teacher-Trainer in Farm Mechanics
Agricultural Engineering Department
Virginia Polytechnic Institute

● THE ESTABLISHMENT of a home farm shop on the farm of each vo-ag student, young farmer, and adult farmer should be a *must* enterprise or improvement project of each conscientious vo-ag teacher.

It is the conservative estimate of many successful farmers that the proper use of a well planned home farm shop has meant the difference of operating on a profitable basis rather than on a non-profitable basis.

For teaching purposes the following analysis of the job has been formulated as a guide, with suggestions under each job which can be changed to meet individual situations:

ENTERPRISE ANALYSIS

I. *The Place of the Home Farm Shop in the Vocational Agricultural Program.*

A. First year students should use "Establishing a Home Farm Shop" as an improvement project. Improving the home farm shop should be used as an improvement project for sophomore, junior, and senior students.

B. The home farm shop is a means of utilizing on the home farm what was learned in the high school shop by all-day, young, and adult farmers.

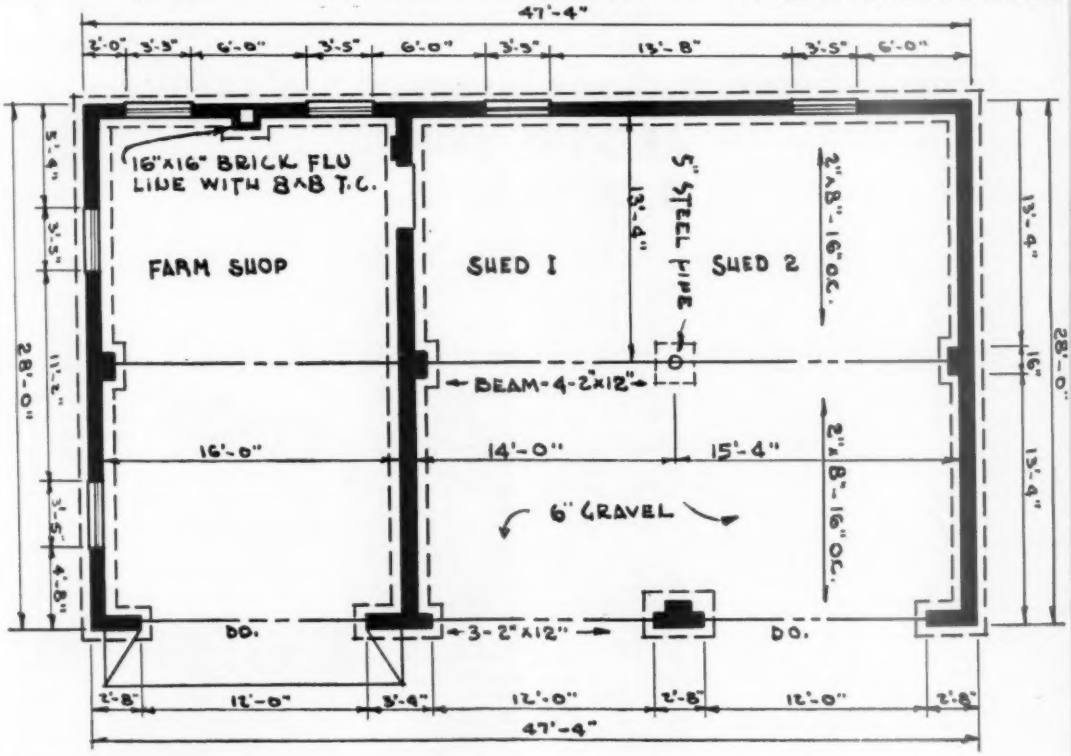
C. From the economic standpoint, a well planned home farm shop provides:

1. A place to perform emergency repair jobs; some by night when commercial repair shops are closed.
2. A place to perform maintenance, construction, and regular repair jobs during bad weather.
3. A place for systematic arrangement and location of strategic machinery parts for each piece of machinery on the farm.
4. A place for storage of supplies.
5. A place for systematic storage of special tools that come with machinery.

II. *Providing the Building*

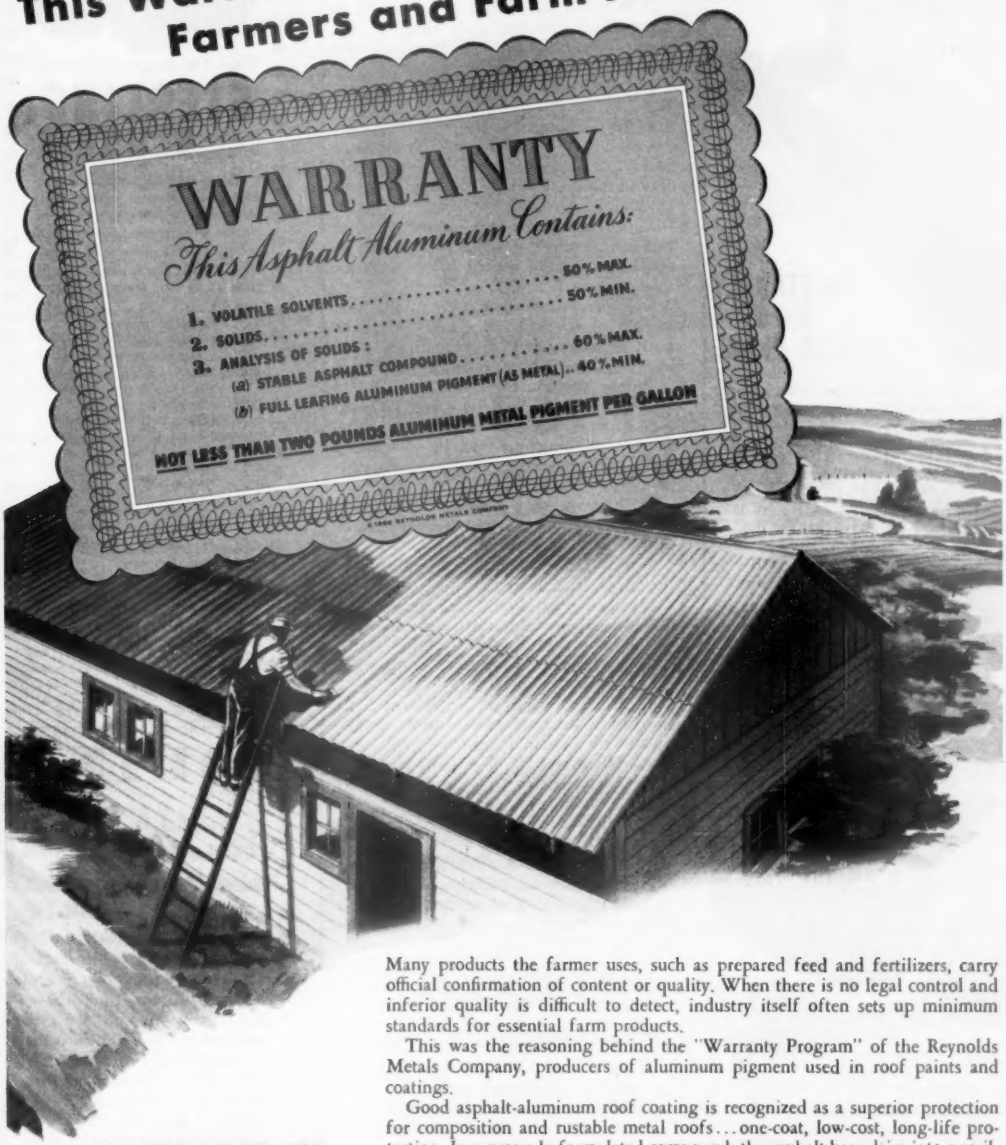
A. Space may be provided on a temporary basis in the most suitable structure now available.

B. Plan permanent alteration of pres-



Floor plan of a proposed home farm shop.

This Warranty is important to Farmers and Farm Advisors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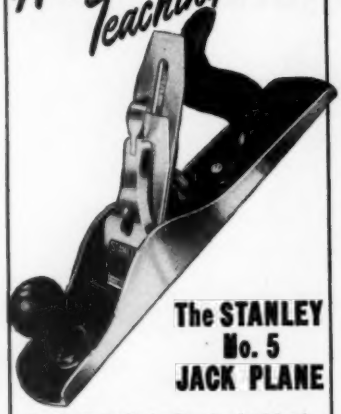
Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky.

A Good Teaching Tool



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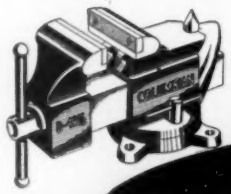

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ent building, if feasible, using the suggestions listed in part C.

C. Plan new building.

1. The home farm shop should be located a safe distance from other farm buildings to reduce the hazards of fire.

2. Select a space that is accessible to the farm machinery. It is usually economical to build a shop in connection with the farm machinery storage.

3. Locate and plan for future expansion.

4. Size—should be large enough to accommodate all present farm machinery and a 100 percent increase. The building should be built in 12-14 foot sections, 28-32 feet deep.

5. It is advisable to build two 12 foot sections together for the farm shop in order to provide ample space to work on equipment.

6. If the farmer owns a combine, one section of the machine shed should be built 14 feet wide to allow enough space to store the combine. If other machinery is larger, provide for same.

7. Use "A" or shed type roof. If shed type is used, the roof over the machine shed must be supported by a wooden beam and posts. Use steel beam to support roof of shop.

8. The large shop door should be 12-14 foot wide and 10 feet high overhead or outside sliding door.

9. Provide a 3-foot door in addition to the large shop door.

10. Shop floor should be concrete. Put a 2-inch slope and a drain in one section of the shop floor.

11. Provide for storage of lumber and other needed material.

12. Provide windows equivalent to 20 percent of the floor space and 20 candlepower for artificial light.

13. 110 V and 220 V circuits should be provided. Install a 60 amp. fuse box for electric welder.

14. Make provisions for safe heat and water in the shop.

15. Use brick, tile, cinderblock or wood in constructing the building. Cinderblock is probably the most economical; wood may be cheaper in some situations but not fire proof.

16. The machine shed section of the structure should be high enough for the entrance of a cattle hauling truck.

III. *Providing Equipment and Facilities*

A. Construct as much equipment as possible in the home farm shop.

B. The student may construct some equipment in the vocational agriculture shop to be used at home.

C. Make a list of equipment that is needed on the home farm.

D. It usually is best to secure essential hand tools first—such as hammers, saws, screwdrivers, pliers, wrenches, etc., then secure essential power tools.

E. Select tools of good quality and the desired sizes.

F. Consult carpenters, blacksmiths,

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Chilean Iodine Educational Bureau, Inc.

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221 North LaSalle Street, Chicago 1, Ill.

and mechanics for information on kind and sizes of tools to purchase.

G. Work benches should be constructed 8 feet long, 32 inches high, and 2 feet wide. These can be constructed at school.

H. The forge may be constructed of concrete or brick. If forge is purchased—a Buffalo #243 is very desirable.

I. Secure from your state agriculture college names and specifications for shop equipment in suggested order of importance.

J. A fire proof arc and acetylene welding booth can be economically constructed of cinder block.

IV. *Arranging Equipment and Facilities*

A. Arrange the equipment along the inner walls of the shop so as to leave the center open for repairing and building large pieces of equipment.

B. Place work benches along the walls, posting on each bench the type of work which is to be done there.

C. Tool cabinets should be placed on the wall over the work benches.

D. Vices should be placed near the end of work benches.

E. Place forge in end of the shop.

F. Locate post drill or drill press between tables so that holes in long pieces of metal may be drilled.

G. The welders should be placed in one corner near large shop door.

H. Provide place to hang such tools as forks, shovels, hoes, and corn knives.

I. Provide cabinets or spaces for special tools that are needed in maintaining each piece of machinery.

J. Lumber and metal storage may be provided for along the wall in the machine storage adjoining the shop.

K. Place supply cabinet against inside wall of shop.

L. The jointer, arbor saw, and planer when acquired usually are placed in a section of the shed adjoining the farm shop. Place each unit on a separate circuit protected with an overload switch.

V. *Maintaining Shop Equipment*

Maintaining the shop equipment at home usually is considered in evaluating the All-Day students grade. Thus, this phase of our program should be taught as is the maintenance of the high school equipment. Each student, with the assistance of the vo-ag teacher, should assemble reference or operator's manuals which relate to all of his jobs and respective equipment. A lubrication chart should be made for each motor and machine.

As is found in the vo-ag shop, most planer, jointer bits and saws are sharpened commercially. A twist drill sharpener should be purchased if a drill is purchased. They cost very little and eliminate many disappointments when drilling. A systematic listing of needed parts should be made daily in order to prevent loss of time.

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"Permanent Low Cost Pasture Improvement" (V1-SC-16)

SEARS, ROEBUCK FOUNDATION, distributed by C. L. Venard, 7-2 S. Adams St., Peoria, Ill.
"Southern Sunrise" 20 min. (V1-SC-16)
"National Farm Oddities" 20 min. (V1-S-16)
"National Farm Newsreel" 17 min. (V1-S-16)
"Time's A-Wastin'" 27 min. (V1-S-16)
"Stitch in Time" 26 min. (V1-S-16)
"Under the 4-H Flag" 44 min. (V1-S-16)
"The Green Hand" 44 min. (V1-S-16)
"An Ounce of Prevention" 25 min. (V1-SC-16)
"The Golden Egg" 23 min. (V1-S-16)
"Where the Road Turns Right" 38 min. (V1-S-16)
"The People Together" 42 min. (V1-SC-16)

SINCLAIR REFINING CO., 10 W. 51st St., New York 20, N.Y.; 2540 W. Cermak Rd., Chicago 8, Ill.; P.O. Box 1710, Atlanta, Ga.; 9th and Grand Ave., Kansas City 13, Mo.; and Fair Bldg., Ft. Worth, Tex.
"Miracle in Paradise Valley" 35 min. (V1-S-16)
"Rainmaker" 45 min. (V1-S-16)

SISALKRAFT CO., 205 W. Wacker Drive, Chicago 6, Ill.
"Money in the Bank"—Temporary Silo Construction, 20 min. (V1-S-16)

STANDARD BRANDS, INC., 595 Madison Ave., New York 22, N.Y.
"Rickets in Calves" 15 min. (V1-16)

SUNBEAM CORP., Hardware-Machinery Div., 5600 Roosevelt Rd., Chicago 50, Ill.
"Sheep Shearing" (V1-S-16)
"Harvesting the Farm Flock Wool Crop" (V1-16)
"Shearing Sheep" (V1-S-16)

SWIFT & CO., Agricultural Research Dept., Chicago 9, Ill.
"By-Products" 10 min. (V1-SC-16)
"Livestock and Meat" 49 min. (V1-S-16)
"A Nation's Meat" 26 min. (V1-SC-16)
"Meat Buying Customs" 10 min. (V1-SC-16)
"Cows and Chickens—USA" 25 min. (V1-S-16)
"Who Buys Your Livestock" 9 min. (V1-S-16)

TEXAS CO., Public Relations Dept., 135 E. 42nd St., New York 17, N.Y.
"Chicken of Tomorrow" 20 min. (V1-SC-16)
"It's News Because It's New" 24 min. (V1-SC-16)
"Your Apple Orchard" 24 min. (V1-SC-16)
"Deep Horizons" 30 min. (V1-SC-16)
"Masters of Molecules" 25 min. (V1-SC-16)
"A New Frontier" 25 min. (V1-SC-16)
"Research—Pattern for Progress" 25 min. (V1-SC-16)
"Tex, the Story of A Champion Calf" (V1-SC)
"Desert Venture" 28 min. (V1-C-16)
"It's Mighty Cheap Insurance" 30 min. (V1-C-16)

UNITED DUROC RECORD ASS'N., Duroc Bldg., Peoria 3, Ill.
"Selecting Swine" 15 min. (V3-35)
"Big Projects Make Profit" 30 min. (V1-SC-16)

UNITED STATES GYPSUM CO., 300 West Adams St., Chicago 6, Ill.
"My Father's House" feature length, showing how a farmhouse was remodeled, inside and out, with easy-to-use materials. (V1-SC)

UNITED STATES STEEL CORPORATION, distributed by United States Steel Subsidiaries, Birmingham Film Distribution Center, Tennessee Coal, Iron and Railroad Company, Brown-Marx Bldg., Birmingham 2, Ala.
"Soil and the South" 20 min. (V1-S-16) (Distribution is limited to the following states: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.)

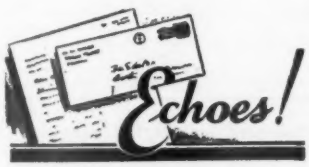
THE VENEER ASSOCIATION, 600 S. Michigan Ave., Chicago 5, Ill.
"Faces and Figures" 28 min. (V1-SC-16)

WESTINGHOUSE ELECTRIC CORP., Film Division, 511 Wood St., Pittsburgh 22, Pa.
"More Time For Living" 30 min. (V1-SC-16)
"What Is Electricity" 20 min. (V1-S-16)
"Frank Martin—Dairyman" 15 min. (V1-S-16)
"It's A Honey" 10 min. (V1-S-16)
"Proper Care Means Longer Wear" 15 min. (V2-S-35)

WEST COAST LUMBERMEN'S ASSOCIATION, 1410 S. W. Morrison St., Portland 5, Ore.
"Lumber for Homes" 30 min. (V1-SC-16)
"Fighting Fire in the West Coast Woods" (V2-C)
"The Magic of Lumber" 22 min. (V1-SC-16)
"The Story of West Coast Lumber" (V-3)

Coming Events

June 3-7—Louisiana state FFA convention, Baton Rouge, La.
June 4-6—Colorado state FFA convention, Estes Park, Colo.
June 4-7—State 4-H Junior Leaders conference, State Fair Grounds, Indianapolis, Ind.
June 4-9—Annual convention of the Holstein-Friesian Association of America, Des Moines, Ia.
June 4-22—Regional Negro school, Prairie View A & M College, Prairie View, Tex.
June 7-9—Annual convention, Georgia Vocational Association, Macon, Ga.
June 7-9—Alabama state FFA convention, Auburn, Ala.
June 7-9—Kentucky state FFA convention, Louisville, Ky.
June 11-13—Mississippi state FFA convention, State College, Miss.
June 11-29—Central Region extension service summer school, University of Wisconsin, Madison, Wis.
June 12-14—Pennsylvania state FFA convention.
June 13-20—National 4-H Club camp, Washington, D. C.
June 15—Chicken-of-Tomorrow contest, Fayetteville, Ark.
June 18-July 6—Western Region extension service summer school, Colorado A & M college, Fort Collins, Colo.
June 18-20—Maine state FFA convention, Orono, Me.
June 18-22—Florida state FFA convention, Daytona Beach, Fla.
June 20-22—State FFA convention, University of Illinois, Urbana, Ill.
June 20-22—South Dakota state FFA convention, Agricultural college, S. D.
June 25-28—Virginia state FFA convention, Blacksburg, Va.
June 27-29—New Jersey state FFA convention.
July 9—Annual conference, Georgia vocational agriculture teachers.
July 9-27—Northeast Region extension service summer school, Cornell university, Ithaca, N. Y.
July 9-27—Workshop for supervising teachers, Michigan State college, East Lansing, Mich.
July 17-19—Texas state FFA convention.
July 20-24—West Virginia state FFA convention, Jackson's Mill, W. Va.
July 22-28—National Farm Safety Week.
July 24-26—Maryland state FFA convention, College Park, Md.
July 30-August 3—Georgia state FFA convention, state FFA camp.
July 30-August 17—Southern Region extension service summer school, University of Arkansas, Fayetteville, Ark.
August 16-17—National Soil Conservation field day and plowing matches, Bethany, Mo.
August 21-28—Regional Negro 4-H Club camp, Pine Bluff, Ark.
August 28-31—Annual meeting, American Society of Agronomy, State College, Pa.
September 29-October 5—Ak-Sar-Ben Livestock Show, Omaha, Neb.
September 29-October 6—National Dairy Cattle Congress, Waterloo, Ia.
October 4-7—Rural Youth conference, Jackson's Mill, W. Va.
October 6-13—Pacific International Livestock Exposition, Portland, Ore.
October 6-13—International Dairy Show, Indianapolis, Ind.
October 8-11—National Future Farmers of America convention, Kansas City, Mo.
October 13-20—American Royal Livestock Exposition, Kansas City, Mo.
October 29-November 1—NACAA convention, Peabody hotel, Memphis, Tenn.
November 24-29—National 4-H Club Congress, Chicago, Ill.
November 25-December 2—International Livestock Exposition, Chicago, Ill.
November 25-29—National Association of County 4-H Club Agents convention, Chicago, Ill.
November 26-30—NVATA annual convention, Minneapolis, Minn.



Comment Appreciated . . .

You have asked for reactions to the proposal to transfer vocational education in agriculture and home economics to the Department of Agriculture. I had the privilege, when Better Farming Methods raised this issue before, of using its columns to indicate that I am completely opposed to the transfer.

I have talked with some of the best informed men in our field and none of them knows who originated this proposal. Certainly it came from outside vocational agriculture unless someone in our field is secretly trying to "pull a fast one."

There is no point in making this transfer at Washington unless vocational agriculture is administered by agricultural agencies in the states, counties, and communities. It cannot be reorganized administratively all the way down, so why start it at the top?

The bill might secure better integration of agriculture activities, but it would be a first step in the disintegration of the public school system and a beautiful precedent for all the out-of-school agencies that would like to grab off a part of the public schools. —*H. M. Hamlin, chairman, division of agricultural education, Urbana, Ill.*

Vote of Appreciation . . .

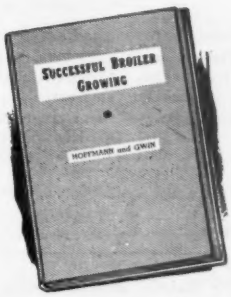
A vote of appreciation to you folks for this splendid service to we vo-ag teachers and other "professional" agriculturists is well deserved. Your publication is a great help to us in keeping us abreast of new developments and trends in modern farming.—*William A. Patterson, vo-ag teacher, Mount Horeb, Wis.*

P.S. . . .

I find your magazine a very good reference for my agricultural classes.—*Russ Spalding, vo-ag teacher, Reading, Mich.*

Raising Broilers?

NEW BOOK shows how to make money growing chickens for meat!



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The Helpful Booklet section has been increased to four full pages, divided into two, two-page units. One two-page unit will run each month, with each unit appearing in alternate months. NEW BOOKLETS ADDED TO THESE UNITS WILL BE MARKED WITH AN ASTERISK (•) FOR THE FIRST TWO MONTHS THEY APPEAR.

CROPS

MARTIN STEEL PRODUCTS CORP.
—"Hay Is What You Make It"

PFISTER ASSOCIATED GROWERS
—"Corn Guide"
—"World Record Yield Release (224.2 bu. per acre)"
—"Germ Protected Seed"

DeKALB AGRICULTURAL ASS'N.
—"Acres of Gold"
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—"How Thick Should I Plant?"
—"How Deep Should Corn Be Planted?"
—"Don't Judge a Kernel by Its Looks"
—(Chart) Hybrid Seed Corn and How It Is Made

FUNK BROS. SEED COMPANY
—"Great Story of Corn"
—"Corn Guide Catalog"
—"Corn Data Notebook"

NITRAGIN COMPANY
—"Inoculated Legumes for Better Farming"

PIONEER SEED COMPANY
—"The Keys To High Corn Yields"•

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LYON RURAL ELECTRIC COMPANY
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—"Electric Beak Cauterization"
—"Electrification of Fuel Heated Incubators"
—"Plans for Outdoor Electric Brooder"
—"Plans for Indoor 100-Chick and 200-Chick Electric Hovers"
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—"Making Paydirt Last"

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—"Sectional View Model D Engine"
—"Sectional View Model S Tractor Transmission"
—"Sectional View Model LA Tractor"
—"Operation Principles Four-Cycle Engine"
—"Know Your Carburetor"
—"For Best Power Take-Off Performance"
—"Combine Sectional View—Model A"
—"The Saga of Sawdust Sam" (safety)
—"Community Leaders"
—"Tractor Sectional View Model VA Series Models"
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—"Practical Plans for Modern Farm Buildings"
—"Farm Improvement Guide"
—Handy Pocket Record Book

DEERE & COMPANY
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—"Hungry Soil"
—"How to Terrace With Moldboard Plows and Disc Tillers"
—"How to Fight Corn Borers"

FOX RIVER TRACTOR COMPANY
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—"Save Feed With Salt"

MARITIME MILLING
—"The B-B Bull Brand Dairy Feeding Guide"
—"Ma-Co Complete Poultry Guide"

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—"Morton Way—Meat Curing"
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(10 copies of each review sent free. Quantities above 10 of any individual review are being made available in lots of 25, or multiples thereof, for $1 for 25 copies, postpaid. Remittance should accompany order.)

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—"Nasco Vo-Ag Catalog" (New Nasco catalogs are mailed to vo-ag instructors on state lists in July of each year. Home Ec catalogs are mailed in January and County Agent catalogs in October)

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RADIO CORP. OF AMERICA
—"Information on the RCA 400 Sound Projectors"

Please send me copies of the following J. I. Case educational inserts that have been published in Better Farming Methods.

.....copies of "Principles of Contour Farming."
.....copies of "How to Build a Farm Pond."
.....copies of "Instructor's Guide to Grassland Farming."

Please send me copies of the following DeKalb Agricultural Ass'n., Inc., educational inserts that have been published in Better Farming Methods.

..... copies of "How to Grow Bigger Corn Yields."

..... copies of "How Hybrid Chicks are Produced."

Film of Social Interest

Here is a source of films which may be of interest to ag leaders. Most of them will deal with social problems of our day and age but still should be educational for use at banquets and meetings.

This list of Visual Aids and other material is made available by the National Conference of Christians and Jews, Incorporated. The description of the material which they distribute may be had by writing to them at 381 Fourth Avenue, New York 16, N. Y.

For What It's Worth

By HERBERT L. SCHALLER, Editor

Cucumbers and Bottles

"When I was a little boy," remarked an old gentleman, "somebody gave me a cucumber in a bottle. The neck of the bottle was small, and the cucumber was so large that it wasn't possible for it to pass through. I wondered how it got there.

"But out in the garden one day I came upon a bottle slipped over a little green fellow that was still on the vine, and then I understood. The cucumber had grown big in the bottle.

"I often see young men and women with habits that I wonder any strong, sensible young person could form, and could allow. But then I think that likely they grew into them when they were smaller. Although they may condemn themselves for them when older, they cannot slip out of them then. They are like the cucumber in the bottle."

Habits are funny things. They can spread like an insidious disease, especially those habits which can be classed as undesirable.

Habits, once acquired, are hard to break. And sometimes an individual cannot break habits without sheer will power and plenty of grit.

Take, for instance, the cucumber in the bottle. It would find it difficult to break the bottle so that it might grow unrestrained. Also, the bottle could be a deciding factor upon the eventual size of the cucumber. It might even limit and stop its growth. And then again, the poor cucumber would find it impossible to gain complete freedom because the neck of the bottle is too narrow for it to pass.

Ag leaders work with young boys and girls, young adult farmers, and older agricultural workers. Many of them counsel with ag teacher, 4-H Club leader, and county agent at a period in their life when they are subject to impressions and habits. They might be likened unto the cucumber.

The vine might be called the wealth of material from which they gain additional education and help. It comes to them in a multitude of ways, from magazines, books, papers, classroom, school, church, community and other methods. This vine of information helps them grow in mental stature.

Now comes the bottle. You and I might be classified as the bottle. We are the ones, especially in our field, who do a great deal to shape their habits and their life. We have within our power the means to restrict their growth or to aid it; to confine them with restraining habits or to keep them unfettered; and perhaps to enclose them in a habit pattern from which they find it is almost next to impossible to escape.

I like to think of county agents, ag teachers, 4-H Club agents, and other agricultural leaders as better than the average. You are professional people. You exert a tremendous influence on a large cross section of rural America. You are more than the corner grocery store man or the druggist or the butcher or the garage man or—yes—even the local minister.

That's why I think we should consider our responsibilities with utmost seriousness. We are living in a day and an age when the way of least resistance seems the accepted fact.

In our position, we influence youth and adults alike, even outside our regular activities. It probably would be astonishing to know of the many people who consider ag leaders as an example to follow.

America needs leaders today. It will need leaders in the future even more. Therefore, let us, as adult agricultural leaders, working in a profession and a trade which is second to none, consider the importance of our position.

Let's not bottle up our little cucumbers.

"It was my wife that wanted to talk to you about terracing—I don't believe in it myself!"

Irrigation Section

Irrigation is not new—yet it is. I mean, of course, that irrigation is new to some parts of the country. It is an agricultural practice that is making farming more profitable for many people.

On page 29 of this issue you will find a 10-page section devoted to irrigation. This is an attempt to place additional emphasis on this phase of agriculture for the benefit of ag leaders.

Our staff has worked hard to bring you something "extra" in this special section. We sincerely hope that it will be of help to you.

HLSchaller

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